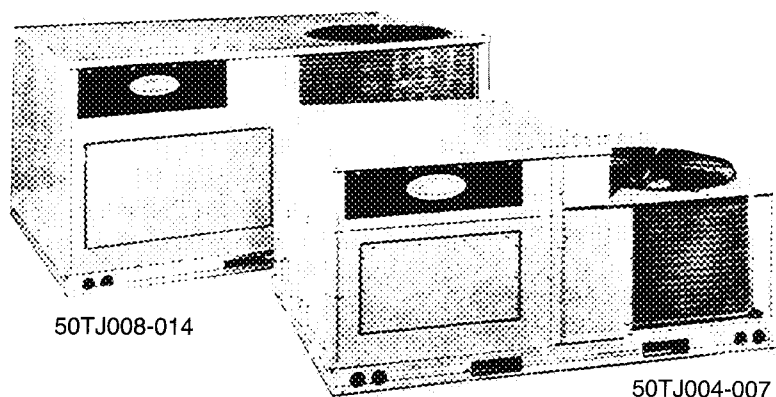




Product Data

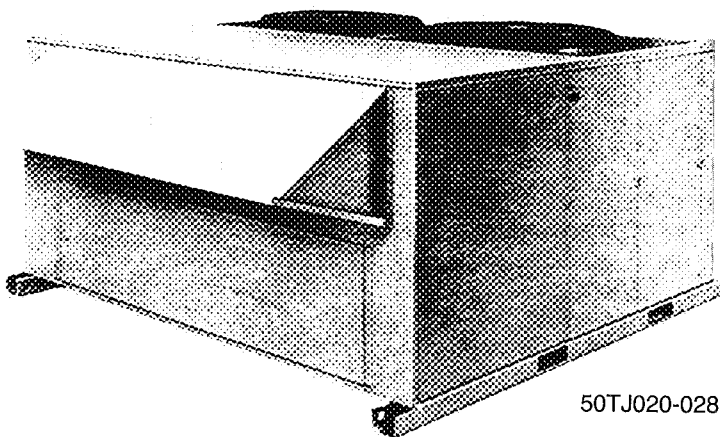
50TJ004-028 Single-Package Rooftop Units Electric Cooling with Electric Heat Option

3 to 25 Nominal Tons



50TJ008-014

50TJ004-007



50TJ020-028

Single-Package Rooftop Units with:

- Galvanized steel cabinet with Carrier Weather Armor® coating
- Return-air filters
- Commercial strength base rails (full perimeter on 004-014)
- Hinged filter access door (004-014)
- Corrosion-resistant sloped condensate pan
- Single power entry to unit
- Commercial duty motors with permanently lubricated bearings
- Standard cooling operation at outdoor ambient temperatures as low as 25 F
- Meets ASHRAE Standard 62

Features/Benefits

Compact, vertical discharge units convert to horizontal discharge (50TJ016-028 require accessory adapter curb), combining installation flexibility with efficient performance and easy maintenance.

Easy installation and conversion

All units are shipped in the vertical discharge configuration for fit-up to standard roof curbs (Two different curb sizes fit unit sizes 004-007 and 008-014 respectively, and one size is offered for 016-028 units.) The contractor can order and install the roof curb early in the construction stage, before decisions on size requirements are made.

All units feature formed base rail design with forklift slots and rigging holes for easier maneuvering. Packaging protects the unit during shipment and storage.

The units can be easily converted from a vertical to a horizontal discharge configuration either by interchanging the panels supplied with the unit (004-014) or by using either of the horizontal supply/return adapter curb assemblies (016-028).

Convenient duct openings in the 50TJ016-028 unit basepans permit side-by-side or concentric duct connections (see Application data section) without requiring internal unit modification.

On 004-014 units, the new, sloped condensate pan permits either an external side condensate drain (outside the roof curb) or an internal bottom drain (inside the roof curb). Both options require an external, field-supplied P-trap. Also, the new condenser coil grille (available on the 004-007 units as a field-installed accessory or a factory-installed option) provides a metal plate as an alternate location for the field-supplied disconnect, if desired.

Factory- and field-installed electric heaters are available in a wide range of capacities. (50TJ004-014 offer field-installed electric heat only.) Single point wiring kit makes installation simple (004-014).

The 50TJ units were designed with the service technician in mind. The single-row condenser coils on the 50TJ004-006 units simplify the cleaning process. In addition, the 50TJ004-014 units have a standard filter access door, which permits tool-less filter changes, and provides an opening for outdoor-air accessories and options.

Simple electrical connections

Terminal boards, located in the base unit control box, facilitate connections to room thermostat, outdoor thermostat(s), economizer, and electric heat. Service panels are quickly removed, permitting easy servicing.

Thru-the-curb service connections (standard on 50TJ016-028 units; accessory on 50TJ004-014 units) allow power and control wiring to be routed through the curb, minimizing roof penetrations. Both power and control connections are made on the same side of the unit to simplify installation.

Proven compressor reliability

Design techniques feature computer-programmed balance between

compressor, condenser, and evaporator. Carrier-specified hermetic (004-014, 020, and 024 units) and semi-hermetic (016 and 028 units) compressors are equipped with compressor overcurrent and overtemperature protection to ensure dependability. Crankcase heaters (016 and 028 units) prevent refrigerant dilution of oil during off cycles and ensure proper lubrication at start-up to prolong compressor life. Crankcase heaters are not necessary on 004-014 and 020,024 units due to high-side crankcase design (007, 014, 020, 024) and low refrigerant charge levels (004-014). Carrier's exclusive Acutrol™ metering device precisely controls refrigerant flow, preventing slugging and flood-back, while maintaining optimum unit performance.

Durable, dependable construction

Produced for durability in any climate, the weather-resistant cabinets are designed with Carrier Weather Armor® coating. The cabinets are made of pre-painted, galvanized steel for long life and attractive appearance.

Integrated economizers and outdoor air

During a first stage call for cooling, if the outdoor-air temperature is below the control changeover set point, the discharge-air sensor modulates the economizer outdoor-air damper open to achieve the set point. When second-stage cooling is called for, the compressor is energized in addition to the economizer. If the outdoor-air temperature is above the change-

over set point, the first stage of compression is activated and the economizer stays at vent position. Economizer operation is controlled by Accusensor™ I dry-bulb thermostat that senses outdoor-air temperature. Accessory upgrade kits include solid-state enthalpy control and differential enthalpy control.

The Varislide™ type economizer on the 50TJ004-014 units has a reliable sliding plate damper which is easily adjusted for 100% outdoor air, 100% return air, or any proportions of mixed air.

For units without economizer, year-round ventilation is enhanced by a manual outdoor-air damper (ordered as standard on 50TJ016-028; ordered as an accessory on 50TJ004-014 units). The damper can be preset to admit up to 25% outdoor air.

Quiet, efficient operation and dependable performance

Compressors have vibration isolation for extremely quiet operation. Efficient fan and motor design permits operation at very low sound levels.

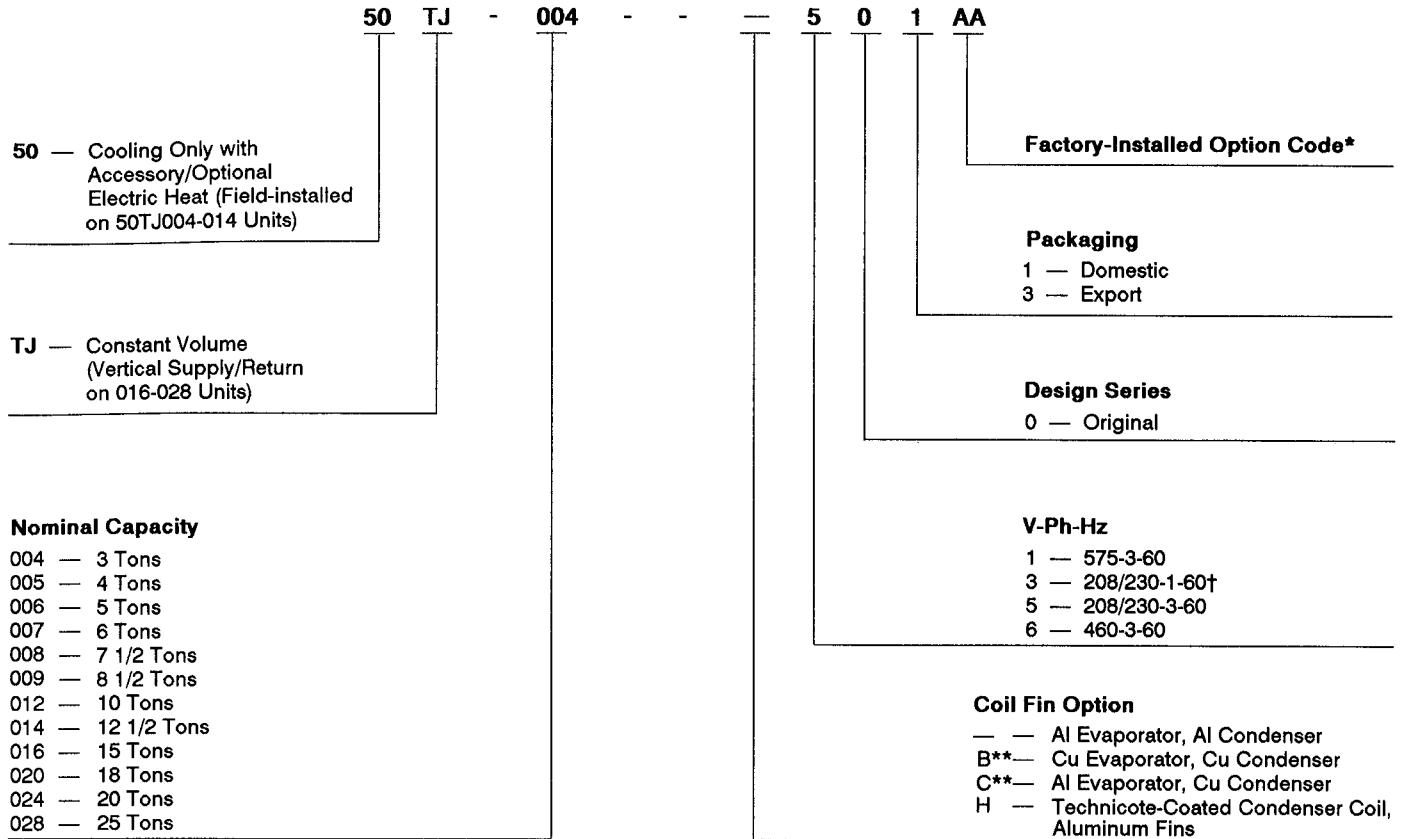
The 50TJ008-028 units offer high energy efficiency and lower utility costs through part load operation using 2 stages of cooling.

Quiet and efficient operation is provided by belt-driven evaporator fans (standard on all units over 5 tons). The belt-driven evaporator-fan with variable-pitch pulleys allows adjustment to available static pressure to meet the job requirements of even the most demanding applications.

Table of contents

	Page
Features/Benefits	1,2
Model Number Nomenclature	3
Physical Data	4-6
ARI Capacity Ratings	7
Options and Accessories	8,9
Base Unit Dimensions	10-13
Accessory Dimensions	14-17
Selection Procedure	17
Performance Data	18-46
Electrical Data	47-51
Typical Piping and Wiring	52,53
Typical Wiring Schematic	54,55
Controls	56
Application Data	57,58
Guide Specifications	59-64

Model number nomenclature



LEGEND

Al — Aluminum
Cu — Copper
FIOP — Factory-Installed Option

*Refer to 50TJ price pages for 50TJ FIOP code table.

†Single phase is available on 5-ton and smaller units.

**50TJ016-028 units only.

Physical data — 50TJ004-007



UNIT SIZE	004	005	006	007
NOMINAL CAPACITY (tons)	3	4	5	6
OPERATING WEIGHT (lb)				
Unit				
Al/Al*	365	375	395	470
Al/Cu*	—	—	—	—
Economizer	34	34	34	34
Roof Curb	115	115	115	115
COMPRESSOR				
Quantity	1	1	1	1
Oil (oz)	50	50	50	54
REFRIGERANT TYPE				
Operating Charge (lb-oz)				
Circuit 1	3-6	4-11	5-13	7-10
Circuit 2	—	—	—	—
CONDENSER COIL				
Rows...Fins/in.	1...17	Enhanced Copper Tubes, Aluminum Lanced Fins	1...17	2...17
Total Face Area (sq ft)	7.36	11.39	13.19	10.42
CONDENSER FAN				
Nominal Cfm	3500	4000	4000	4000
Quantity...Diameter (in.)	1...22.0	1...22.0	1...22.0	1...22.0
Motor Hp...Rpm	1/4...1100	1/4...1100	1/4...1100	1/4...1100
Watts Input (Total)	325	325	325	325
EVAPORATOR COIL				
Rows...Fins/in.	2...15	Enhanced Copper Tubes, Aluminum Double-Wavy Fins, Acutrol™ Feed Device	3...15	4...15
Total Face Area (sq ft)	4.17	5.5	5.5	5.5
EVAPORATOR FAN				
Quantity...Size (in.)	Std 1...10 x 10	Centrifugal Type 1...10 x 10	1...11 x 10	1...10 x 10
Type Drive	Alt 1...10 x 10	1...10 x 10	1...10 x 10	—
Nominal Cfm	Std Direct	Std Direct	Std Direct	—
Motor Hp	Alt Belt	Alt Belt	Alt Belt	—
Maximum Continuous Bhp	Std 1200	Std 1600	Std 2000	2400
Motor Frame Size	Alt —	Alt —	Alt —	—
Nominal Rpm High/Low	Std .34	Std .75	Std 1.20	2.40
Fan Rpm Range	Alt 1.00	Alt 1.00	Alt 1.80	—
Motor Bearing Type	Std 48	Std 48	Std 48	56
Maximum Allowable Rpm	Alt 48	Alt 48	Alt 48	—
Motor Pulley Pitch Diameter	Std 860/800	Std 1075/970	Std 1075/970	—
Min/Max (in.)	Alt —	Alt —	Alt —	1070-1460
Nominal Motor Shaft Diameter (in.)	Std 760-1000	Std 835-1185	Std 900-1300	—
Fan Pulley Pitch Diameter (in.)	Alt Ball	Alt Ball	Alt Ball	—
Belt, Quantity...Type...Length (in.)	Std 2100	Std 2100	Std 2100	2100
Pulley Center Line Distance (in.)	Alt —	Alt —	Alt —	2 8/3 8
Speed Change per Full Turn of Movable Pulley Flange (rpm)	Std 1.9/2.9	Std 1 9/2 9	Std 2 4/3 4	—
Movable Pulley Maximum Full Turns From Closed Position	Alt 1/2	Alt 1/2	Alt 1/2	5/8
Factory Setting	Std 1/2	Std 1/2	Std 1/2	—
Factory Speed Setting (rpm)	Alt 4.5	Alt 4.0	Alt 4.5	4.5
Fan Shaft Diameter at Pulley (in.)	Std —	Std —	Std —	1. A. 40
HIGH-PRESSURE SWITCH (psig)†	Alt 1...A...34	Alt 1. A.. 34	Alt 1 A .34	—
Standard Compressor Internal Relief (Differential)	Std 10.0-12.4	Std 10.0-12.4	Std 14.7-15.5	14 7-15 5
Cutout	Alt —	Alt —	Alt —	—
Reset (Auto.)	Std 48	Std 70	Std 80	80
LOW-PRESSURE SWITCH (psig)†	Alt —	Alt —	Alt —	—
Cutout	Std 5	Std 5	Std 5	5
Reset (Auto.)	Alt —	Alt —	Alt —	—
FREEZE PROTECTION THERMOSTAT (F)†	Std 3	Std 3	Std 3	3
Opens	Alt —	Alt —	Alt —	—
Closes	Std —	Std —	Std —	—
OUTDOOR-AIR INLET SCREENS	Alt —	Alt —	Alt —	—
Quantity...Size (in.)	Std —	Std —	Std —	—
RETURN-AIR FILTERS	Alt —	Alt —	Alt —	—
Quantity...Size (in.)	Std —	Std —	Std —	—

LEGEND
Al — Aluminum Bhp — Brake Horsepower
Cu — Copper

*Evaporator coil fin material/condenser coil fin material.
†Requires an accessory or optional controls upgrade kit.
**Weight of 14-in. roof curb.

††On 50TJ020-028 units, Circuit 1 consists of lower portion of both the condenser and evaporator coils, and Circuit 2 consists of the upper portion of both coils.

‡50TJ016-028 units have adjustable drives.

†The 50TJ028 units require 2-in. industrial-grade filters capable of handling face velocities up to 625 ft/min (such as American Air Filter no. 5700 or equivalent).

NOTE: The 50TJ004-014 units have a loss-of-charge/low-pressure switch (accessory) located in the liquid line, and the 50TJ016-028 units have a low-pressure switch in the suction line (standard).

Physical data — 50TJ008-014



UNIT SIZE	008	009	012	014
NOMINAL CAPACITY (tons)	7½	8½	10	12½
OPERATING WEIGHT (lb)				
Unit	755	760	915	930
Al/Al*	—	—	—	—
Al/Cu*	—	—	—	—
Economizer	44	44	44	44
Roof Curb**	143	143	143	143
COMPRESSOR				
Quantity	2	2	2	2
Oil (oz)	50 ea	50 ea	50 ea	54 ea
REFRIGERANT TYPE				
Operating Charge (lb-oz)				
Circuit 1	7-0	7-0	9-7	9-13
Circuit 2	5-12	6-2	8-6	8-3
CONDENSER COIL				
Rows...Fins/in.	1.. 17	2.. 17	2.. 17	2.. 17
Total Face Area (sq ft)	20.50	14.25	19.86	25.00
CONDENSER FAN				
Nominal Cfm	6500	6500	7000	7200
Quantity...Diameter (in.)	1...26	1...26	1...26	1...26
Motor Hp...Rpm	¾...1100	¾...1100	¾...1100	¾...1100
Watts Input (Total)	950	950	950	950
EVAPORATOR COIL				
Rows...Fins/in.	3.. 15	3...15	3.. 15	4.. 15
Total Face Area (sq ft)	8.0	8.0	10.0	11.1
EVAPORATOR FAN				
Quantity...Size (in.)				
Std	1 15 x 15	1 15 x 15	1 15 x 15	1 15 x 15
Alt	1 15 x 15	—	1...15 x 15	1 15 x 15
Type Drive	Belt	Belt	Belt	Belt
Nominal Cfm	3000	3400	4000	5000
Motor Hp	—	—	—	—
Std	—	—	—	—
Alt	—	—	—	—
Maximum Continuous Bhp	2.40	2.40	2.40	4.20
Std	—	—	2.90	4.90
Alt	—	—	—	—
Motor Frame Size	56	56	56	56
Std	—	—	56	56
Alt	—	—	—	—
Nominal Rpm High/Low	—	—	—	—
Std	—	—	—	—
Alt	—	—	—	—
Fan Rpm Range	590-840	685-935	685-935	860-1080
Std	685-935	—	835-1085	900-1260
Alt	—	—	—	—
Motor Bearing Type	Ball	Ball	Ball	Ball
Maximum Allowable Rpm	2100	2100	2100	2100
Motor Pulley Pitch Diameter	2.4/3.4	2.8/3.8	2.8/3.8	4.0/5.0
Std	—	—	—	—
Alt	2.8/3.8	—	3.4/4.4	3.1/4.1
Min/Max (in.)	—	—	—	—
Nominal Motor Shaft Diameter (in.)	¾	¾	¾	¾
Std	—	—	—	—
Alt	—	—	—	—
Fan Pulley Pitch Diameter (in.)	7.0	7.0	7.0	8.0
Std	7.0	—	7.0	5.9
Alt	—	—	—	—
Belt, Quantity...Type...Length (in.)	1...A..48	1...A..48	1...A...51	1...A...51
Std	1...A...51	—	1...A...57	1...BX...46
Alt	—	—	—	—
Pulley Center Line Distance (in.)	16.75-19.25	16.75-19.25	15.85-17.50	15.85-17.50
Std	16.75-19.25	—	15.85-17.50	15.85-17.50
Alt	—	—	—	—
Speed Change per Full Turn of Movable Pulley Flange (rpm)	50	50	50	44
Std	50	—	50	50
Alt	—	—	—	—
Movable Pulley Maximum Full Turns From Closed Position	5	5	5	5
Std	5	—	5	6
Alt	—	—	—	—
Factory Setting	5	5	5	5
Std	5	—	5	5
Alt	—	—	—	—
Factory Speed Setting (rpm)	590	685	685	860
Std	685	—	835	960
Alt	—	—	—	—
Fan Shaft Diameter at Pulley (in.)	1	1	1	1
HIGH-PRESSURE SWITCH (psig)†				
Standard Compressor Internal Relief (Differential)		450 ± 50		500 ± 50
Cutout		428		428
Reset (Auto.)		320		320
LOW-PRESSURE SWITCH (psig)†				
Cutout			7 ± 3	
Reset (Auto.)			22 ± 7	
FREEZE PROTECTION THERMOSTAT (F)†				
Opens			30 ± 5	
Closes			45 ± 5	
OUTDOOR-AIR INLET SCREENS				
Quantity...Size (in.)			Cleanable	
			1.. 20 x 25 x 1	
			1...16 x 25 x 1	
RETURN-AIR FILTERS				
Quantity...Size (in.)			Throwaway	
	4.. 16 x 20 x 2	4.. 16 x 20 x 2	4.. 20 x 20 x 2	4 20 x 20 x 2

LEGEND

Al — Aluminum Bhp — Brake Horsepower
Cu — Copper

*Evaporator coil fin material/condenser coil fin material.

†Requires an accessory or optional controls upgrade kit.

**Weight of 14-in. roof curb.

††On 50TJ020-028 units, Circuit 1 consists of lower portion of both the condenser and evaporator coils, and Circuit 2 consists of the upper portion of both coils

||50TJ016-028 units have adjustable drives.

¶The 50TJ028 units require 2-in. industrial-grade filters capable of handling face velocities up to 625 ft/min (such as American Air Filter no. 5700 or equivalent).

NOTE: The 50TJ004-014 units have a loss-of-charge/low-pressure switch (accessory) located in the liquid line, and the 50TJ016-028 units have a low-pressure switch in the suction line (standard).

Physical data — 50TJ016-028



UNIT SIZE	016		020	024	028
	208/230,460 v	575 v			
NOMINAL CAPACITY (tons)	15		18	20	25
OPERATING WEIGHT (lb)					
Unit					
Al/Al*	1470		1730	1730	2114
Al/Cu*	1550		1860	1860	2244
Economizer	110		110	110	110
Roof Curb**	200		200	200	200
COMPRESSOR	Semi-Hermetic			Hermetic	Semi-Hermetic
Quantity	1		2	2	2
Oil (oz)	130		65 ea	65 ea	152 ea
REFRIGERANT TYPE			R-22		
Operating Charge (lb-oz)					
Circuit 1††	22-4		15-8	15-8	16-12
Circuit 2	—		15-8	15-8	15-12
CONDENSER COIL			Enhanced Copper Tubes, Aluminum Lanced or Copper Fins		
Rows...Fins/in.	3 . 13 6		4...15	4...15	4...15
Total Face Area (sq ft)	18.9		22.2	22.2	22.2
CONDENSER FAN			Propeller Type		
Nominal Cfm	12,000		14,200	14,200	14,200
Quantity...Diameter (in.)	2...26		2 . 30	2 . 30	2 . 30
Motor Hp...Rpm	1.. 1075		1...1075	1 . 1075	1.. 1075
Watts Input (Total)	3550		3400	3400	3400
EVAPORATOR COIL			Copper Tubes, Aluminum or Copper Plate Fins		
Rows...Fins/in.	3...14.3		4...15	4...15	4...15
Total Face Area (sq ft)	16.5		17.9	17.9	17.9
EVAPORATOR FAN‡			Centrifugal Type		
Quantity...Size (in.)	2...10 x 10	2 . 10 x 10	2.. 12 x 12	2 . 12 x 12	2...12 x 12
Type Drive	Belt	Belt	Belt	Belt	Belt
Nominal Cfm	6000	6000	7200	8000	10,000
Motor Hp	3.7	3.0	5	7½	10
Maximum Continuous Bhp	4.25	3.45	5.90	8.7 [208/230,575 v]	10.26 [208/230,575 v]
				9.5 [460 v]	11.80 [460 v]
Motor Frame Size	56H	56H	184T	213T	215T
Fan Rpm Range	1194-1526	896-1161	1047-1251	1238-1494	1323-1579
Motor Bearing Type	Ball	Ball	Ball	Ball	Ball
Maximum Allowable Rpm	1550	1550	1550	1550	1550
Motor Pulley Pitch Diameter	3.4/4.4	4.0/5.0	4.9/5.9	5.4/6.4	5.8/7.0
Min/Max (in.)					
Nominal Motor Shaft Diameter (in.)	¾	¾	1½	1¾	1¾
Fan Pulley Pitch Diameter (in.)	5.2	4.9	8.4	7.9	7.9
Belt, Quantity...Type...Length (in.)	1 . AX...42	1...BX...38	1...BX...50	1 BX...50	1...BX...51
Pulley Center Line Distance (in.)	13.5-15.5	13.5-15.5	13.3-14.8	14.6-15.4	14.6-15.4
Speed Change per Full Turn of Movable Pulley Flange (rpm)	66	54	34	43	43
Movable Pulley Maximum Full Turns From Closed Position	5	5	6	6	6
Factory Setting	3.5	3.5	3	3	3
Factory Speed Setting (rpm)	1293	975	1149	1366	1451
Fan Shaft Diameter at Pulley (in.)	1¾	1¾	1¾	1¾	1¾
HIGH-PRESSURE SWITCH (psig)			—		
Standard Compressor Internal Relief (Differential)			426		
Cutout			320		
Reset (Auto.)					
LOW-PRESSURE SWITCH (psig)			7		
Cutout			22		
Reset (Auto.)					
FREEZE PROTECTION THERMOSTAT (F)			30 ± 5		
Opens			45 ± 5		
Closes					
OUTDOOR-AIR INLET SCREENS			Cleanable		
Quantity...Size (in.)			2 . 20 x 25 x 1		
			1 . 20 x 20 x 1		
RETURN-AIR FILTERS			Throwaway††		
Quantity...Size (in.)	2 . 20 x 20 x 2		4 . 20 x 20 x 2		
	3 . 16 x 20 x 2		4 . 16 x 20 x 2		
	2 . 16 x 25 x 2				

LEGEND

Al — Aluminum Bhp — Brake Horsepower
Cu — Copper

*Evaporator coil fin material/condenser coil fin material.

†Requires an accessory or optional controls upgrade kit.

**Weight of 14-in. roof curb.

††On 50TJ020-028 units, Circuit 1 consists of lower portion of both the condenser and evaporator coils, and Circuit 2 consists of the upper portion of both coils

‡50TJ016-028 units have adjustable drives.

†The 50TJ028 units require 2-in. industrial-grade filters capable of handling face velocities up to 625 ft/min (such as American Air Filter no 5700 or equivalent).

NOTE: The 50TJ004-014 units have a loss-of-charge/low-pressure switch (accessory) located in the liquid line, and the 50TJ016-028 units have a low-pressure switch in the suction line (standard).

ARI capacity ratings*



UNIT 50TJ	NOMINAL TONS	STANDARD CFM	NET COOLING CAPACITY (Btuh)	TOTAL kW	SEER†		EER	SOUND RATING (Bels)
					Belt Drive	Direct Drive		
004	3	1200	35,000	4.0	10.0	9.7	8.7	8.2
005	4	1600	47,000	5.5	10.0	9.7	8.6	8.2
006	5	2000	57,000	6.7	10.0	9.7	8.5	8.2

UNIT 50TJ	NOMINAL TONS	STANDARD CFM	NET COOLING CAPACITY (Btuh)	TOTAL kW	EER	SOUND RATING (Bels)	IPLV
007	6	2100	70,000	7.9	8.9	8.4	**
008	7½	3000	86,000	9.7	8.9	8.6	9.10
009	8½	3000	98,000	11.0	8.9	8.6	9.30
012	10	4000	117,000	13.1	8.9	8.8	9.00
014	12½	4500	142,000	16.5	8.6	8.8	8.85

UNIT 50TJ	NOMINAL TONS	NET COOLING CAPACITY (Btuh)	TOTAL kW	EER	IPLV
016	15	180,000	20.9	8.6	10.60
020	18	194,000	22.8	8.6	8.20
024	20	220,000	25.9	8.5	8.30
028	25	268,000	31.2	8.6	8.40

LEGEND

Bels — Sound Levels (1 bel = 10 decibels)
db — dry bulb
EER — Energy Efficiency Ratio
IPLV — Integrated Part-Load Values
SEER — Seasonal Energy Efficiency Ratio
wb — wet bulb

*ARI — Air Conditioning and Refrigeration Institute.

†Applies only to units with capacity of 65,000 Btuh or less

**The IPLV only applies to 2-stage cooling units.

NOTES:

1. Rated in accordance with ARI Standards 210/240-89 or 360-86 (for 014-024) and 270-84
2. The 50TJ028 is beyond the scope of the ARI Certification Program.
3. Ratings are net values, reflecting the effects of circulating fan heat
4. Ratings are based on:



Cooling Standard: 80 F db, 67 F wb indoor entering-air temperature and 95 F db air entering outdoor unit

IPLV Standard: 80 F db, 67 F wb indoor entering-air temperature and 80 F db outdoor entering-air temperature.

Options and accessories



ITEM	OPTION*	ACCESSORY†
Integrated Economizer (Includes Hood for 004-014 Units)	X	X
Electric Heat**	X††	X
Manual Outdoor-Air Damper (004-014)	X	X
Controls Upgrade Kit (004-014)	X	X
Condenser Coil Grille (004-014)	X	X
Alternate Drive (008)	X	
Alternate Motor and Drive (004-006, 012, 014)	X	
Two-Position Damper		X
Barometric Relief Damper (016-028)		X
Roof Curbs (Vertical Discharge)		X
Horizontal Discharge Adapter Curbs (016-028)		X
Remote Control Panel		X
Thermostat and Subbase		X
Power Exhaust (016-028)		X
25 F Low-Ambient Kit (016, 028)		X
Winter Start Time-Delay Relay (020-028)		X
Motormaster® Head Pressure Control (Speed Control) (004-007 and 016)		X
Motormaster II Head Pressure Control (Fan Cycling) (004-014)		X
Motormaster III Head Pressure Control (Speed Control) (020-028)		X
Time Guard® II Control Circuit		X
Thru-the-Curb Service Connections (004-014)		X
Electronic Programmable Thermostat		X
Accusensor™ II Enthalpy Control (004-014)		X
Accusensor III Enthalpy Sensor		X
Condenser Coil Hall Guard Assembly (004-014)		X
External 1-in. Filter Package (004-014)		X

*Factory installed.

†Field installed

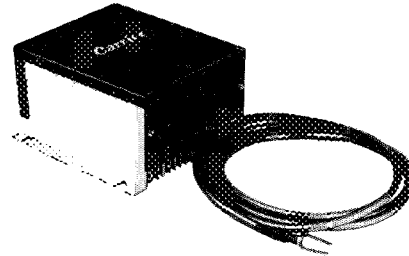
**Electric heat for 575-v units is only offered on 50TJ008-016 units.

††50TJ016-028 units only.

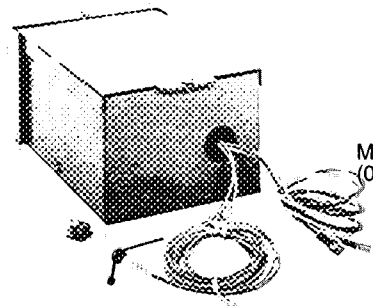
NOTE: The manual outdoor-air damper is ordered as standard on 50TJ016-028 units without an economizer.

HEAD PRESSURE CONTROL

The 50TJ004-014, 020, and 024 standard units are designed to operate at outdoor temperature down to 25 F. The standard 50TJ016 operates down to 40 F, and the standard 50TJ028 operates down to 48 F. With accessory Motormaster control (condenser-fan speed modulation for unit sizes 004-007 and 016) or Motormaster II control (condenser-fan cycling for unit sizes 004-014), or Motormaster III control (condenser-fan speed modulation for unit sizes 020-028), units can operate at outdoor temperatures down to -20 F*. The head pressure controls, which mount in the condenser section, modulate the condenser-fan motor to maintain correct condensing temperature.

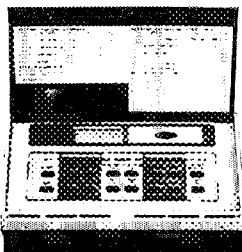
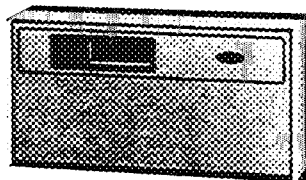


MOTORMASTER
(004-007 and 016)



MOTORMASTER II
(004-014)

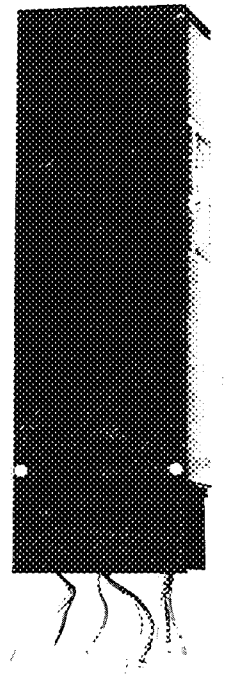
ELECTRONIC PROGRAMMABLE THERMOSTAT



Electronic programmable thermostat provides efficient temperature control by allowing you to program heating and cooling setbacks and setups with provisions for weekends and holidays. Accessory remote sensing package is also available to provide tamperproof control in high traffic spaces.

TIME GUARD II CONTROL

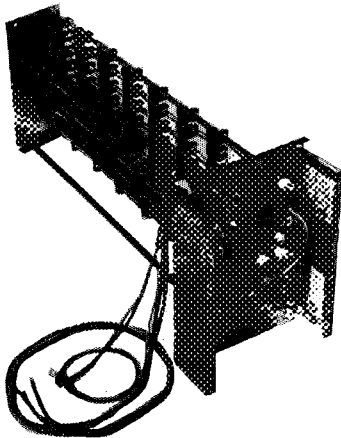
Time Guard II Control automatically prevents compressor from re-starting for at least 5 minutes after a shutdown. Accessory prevents short cycling of compressor if thermostat is rapidly changed. Time Guard II device mounts in the control compartment of unit.



MOTORMASTER III
(020-028)

*50TJ016-028 units require both the accessory low-ambient kit and accessory Motormaster control to operate down to -20 F.

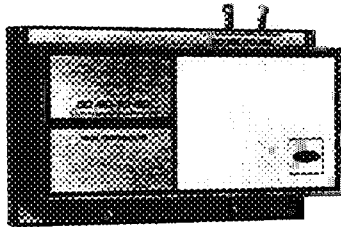
ELECTRIC HEATER



Electric heaters are available in a wide range of capacities for factory or field installation

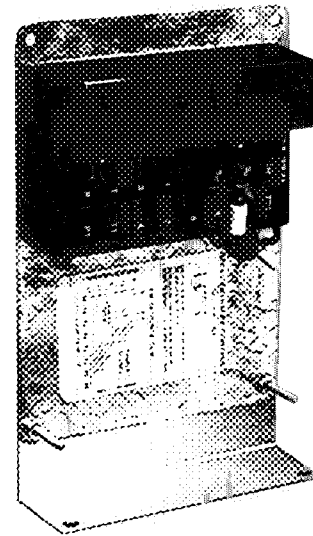
NOTE: Heaters are field-installed only on the 004-014 units.

THERMOSTAT

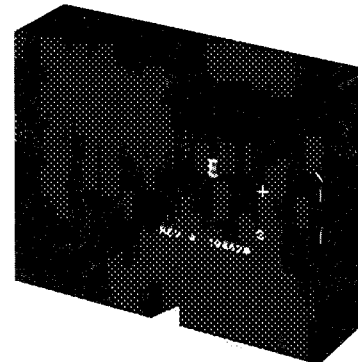


Zone thermostat (24 v) provides one- or 2-stage cooling for control of unit. Matching subbases are available with or without tamperproof switches and automatic changeover.

ACCUSENSOR™ II (004-014 Only)

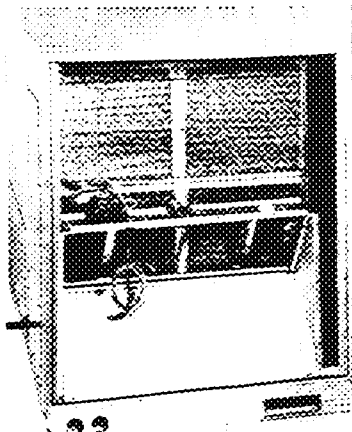


ACCUSENSOR III



Accusensor economizer controls help provide efficient, economical economizer operation. Accusensor II solid-state enthalpy control includes the logic and one sensor to calculate both dry and wet bulb of the outdoor air to provide an accurate enthalpy reading on 004-014 units. It then decides when to energize the economizer based on this reading. The 016-028 unit economizer provides the decision-making function internally, and requires one Accusensor III sensor for solid-state enthalpy control. Accusensor III differential enthalpy sensor provides information for comparison of outdoor temperature and humidity to return-air temperature and humidity and determines the most economical mixture of air (when purchased in addition to solid-state enthalpy control).

VARISLIDE™ ECONOMIZER (004-014)



Exclusive Varislide economizer damper design saves energy while providing economical and reliable cooling. A sliding plate on the face of the economizer controls the amount of outdoor air entering the system. Closed, it provides a leakproof seal which prevents ambient air from seeping in or conditioned air from seeping out. It can be easily adjusted for 100% outdoor air or any proportions of mixed air. Like the base unit, the economizer is easily converted for horizontal discharge applications.

Base unit dimensions — 50TJ004-007



UNIT 50TJ	STD UNIT WEIGHT		ECONOMIZER WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
004	365	165.6	34	15.4	126	57.2	89	40.4	111	50.3	39	17.7
005	375	170.1	34	15.4	128	58.1	90	40.8	114	51.7	43	19.5
006	395	179.2	34	15.4	132	59.9	94	42.6	120	54.4	49	22.2
007	470	213.2	34	15.4	148	67.1	103	46.7	155	70.3	64	29.0

CONNECTION SIZES	
A	1 1/8" dia [28.6] field power supply hole
B	3/4"-14 NPT condensate drain
C	1 3/8" dia [35] power supply knockout
D	2" dia [50.8] power supply knockout

*Indicates horizontal center of gravity.

†Indicates vertical center of gravity

NOTES:

1 Dimensions in [] are in millimeters.

2 Center of gravity.

3 Direction of airflow

4 Ductwork to be attached to accessory roof curb only

5 Minimum clearance (local codes or jurisdiction may prevail):

a Bottom to combustible surfaces (when not using curb) 0 inches. On horizontal discharge units with electric heat 1 in clearance to ductwork for 1 ft

b. Condenser coil, for proper airflow, 36 in. one side, 12 in the other. The side getting the greater clearance is optional

c. Overhead, 60 in. to assure proper condenser fan operation.

d. Between units, control box side, 42 in. per NEC (National Electrical Code).

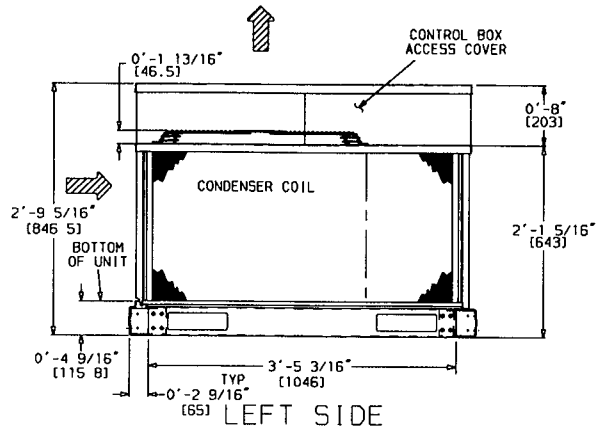
e. Between unit and ungrounded surfaces, control box side, 36 in. per NEC

f. Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in. per NEC

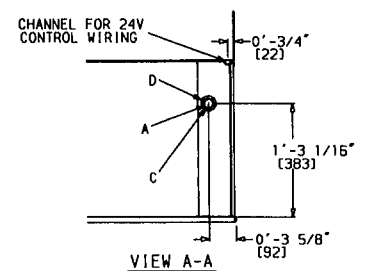
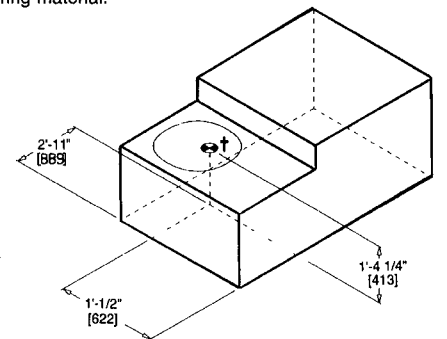
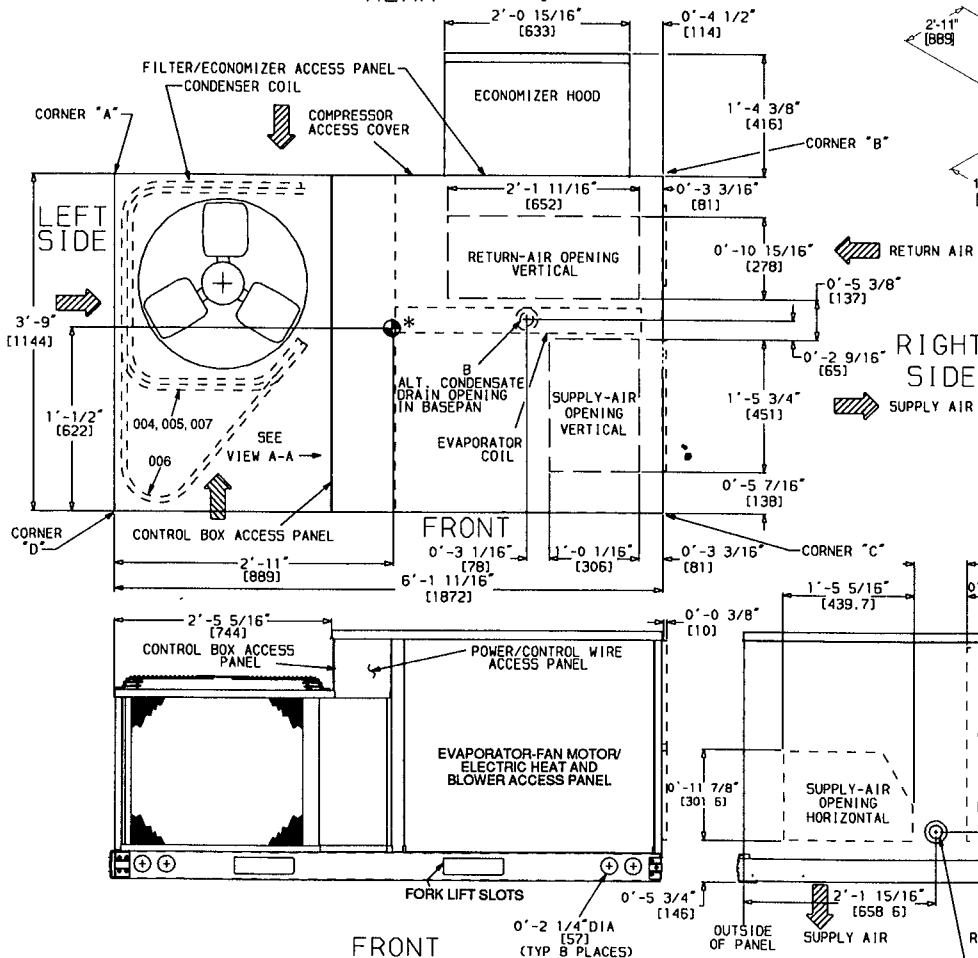
g. Horizontal supply and return end, 0 inches.

6 With the exception of the clearance for the condenser coil as stated in Notes 5a, b, and c, a removable fence or barricade requires no clearance

7 Units may be installed on combustible floors made from wood or class A, B, or C roof covering material.



REAR



VIEW A-A

RIGHT SIDE

Base unit dimensions — 50TJ008-014



UNIT 50TJ	STD. UNIT WEIGHT		ECONOMIZER WEIGHT		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		"H"		"J"		"K"	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Ft.-in.	mm	Ft.-in.	mm	Ft.-in.	mm
008	755	342	44	20	164	74	140	64	208	94	243	110	2'-0 7/8"	632	3'-5 5/16"	1050	2'-9 1/16"	856
009	760	345	44	20	165	75	141	64	209	94	245	111	1'-2 7/8"	378	3'-5 5/16"	1050	2'-9 1/16"	856
012	915	415	44	20	199	90	170	77	252	114	294	134	2'-10 7/8"	885	4'-1 5/16"	1253	3'-0 3/8"	924
014	930	422	44	20	202	92	172	78	256	116	300	136	1'-2 7/8"	378	4'-1 5/16"	1253	3'-0 3/8"	924

LEGEND

NEC — National Electrical Code

*Indicates horizontal center of gravity

†Indicates vertical center of gravity.

NOTES:

1 Dimensions in [] are in millimeters.

2 Center of gravity

3 Direction of airflow.

4. Ductwork to be attached to accessory roof curb only

5. Minimum clearance (local codes or jurisdiction may prevail):

a Bottom to combustible surfaces (when not using curb) 0 in., on horizontal discharge units with electric heat 1 in. clearance to ductwork for 1 ft

b Condenser coil, for proper airflow, 36 in. one side, 12 in. the other. The side getting the greater clearance is optional.

c Overhead, 60 in. to assure proper condenser fan operation.

d Between units, control box side, 42 in. per NEC

e Between unit and ungrounded surfaces, control box side, 36 in. per NEC

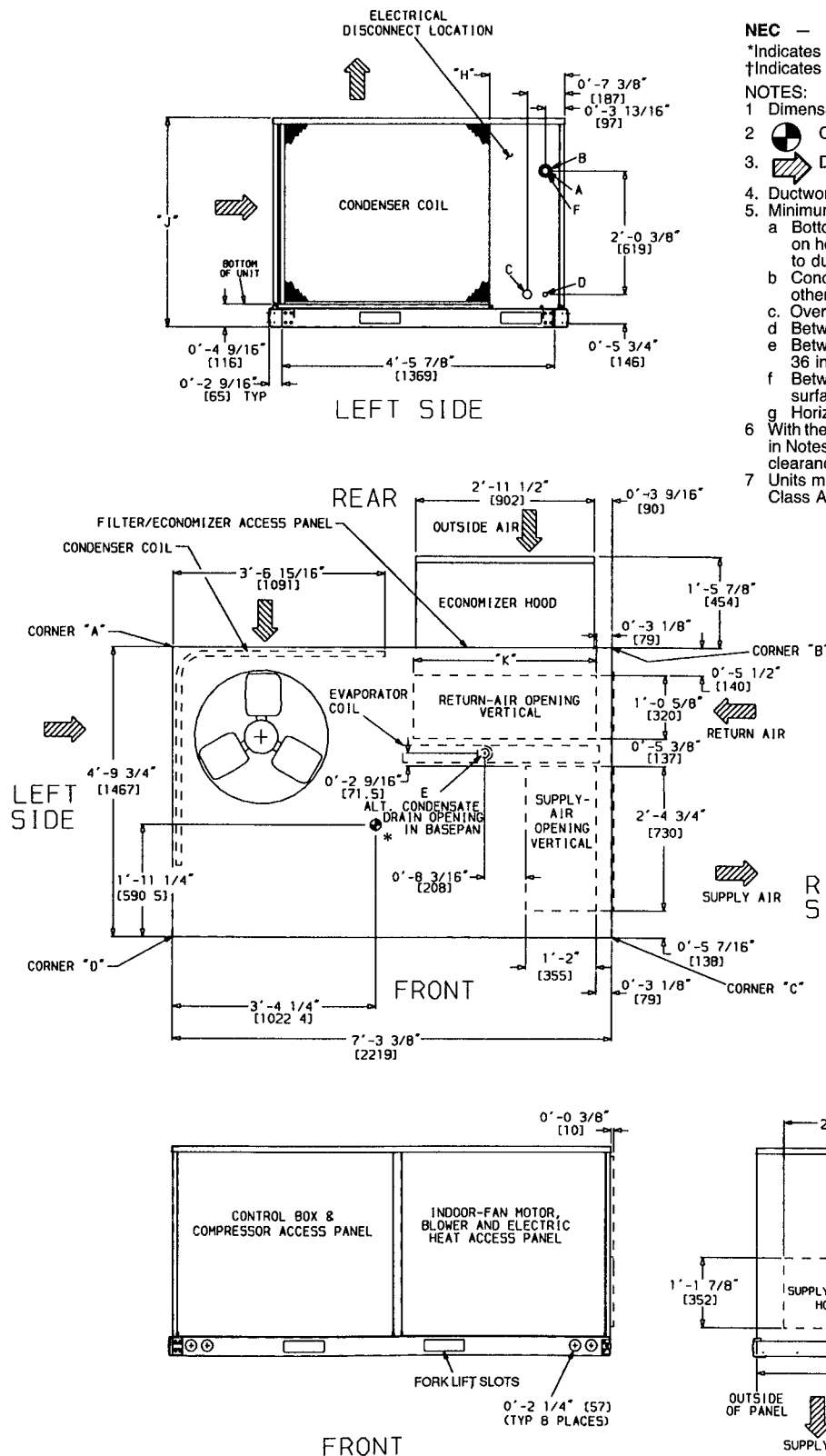
f Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in. per NEC

g Horizontal supply and return end, 0 inches.

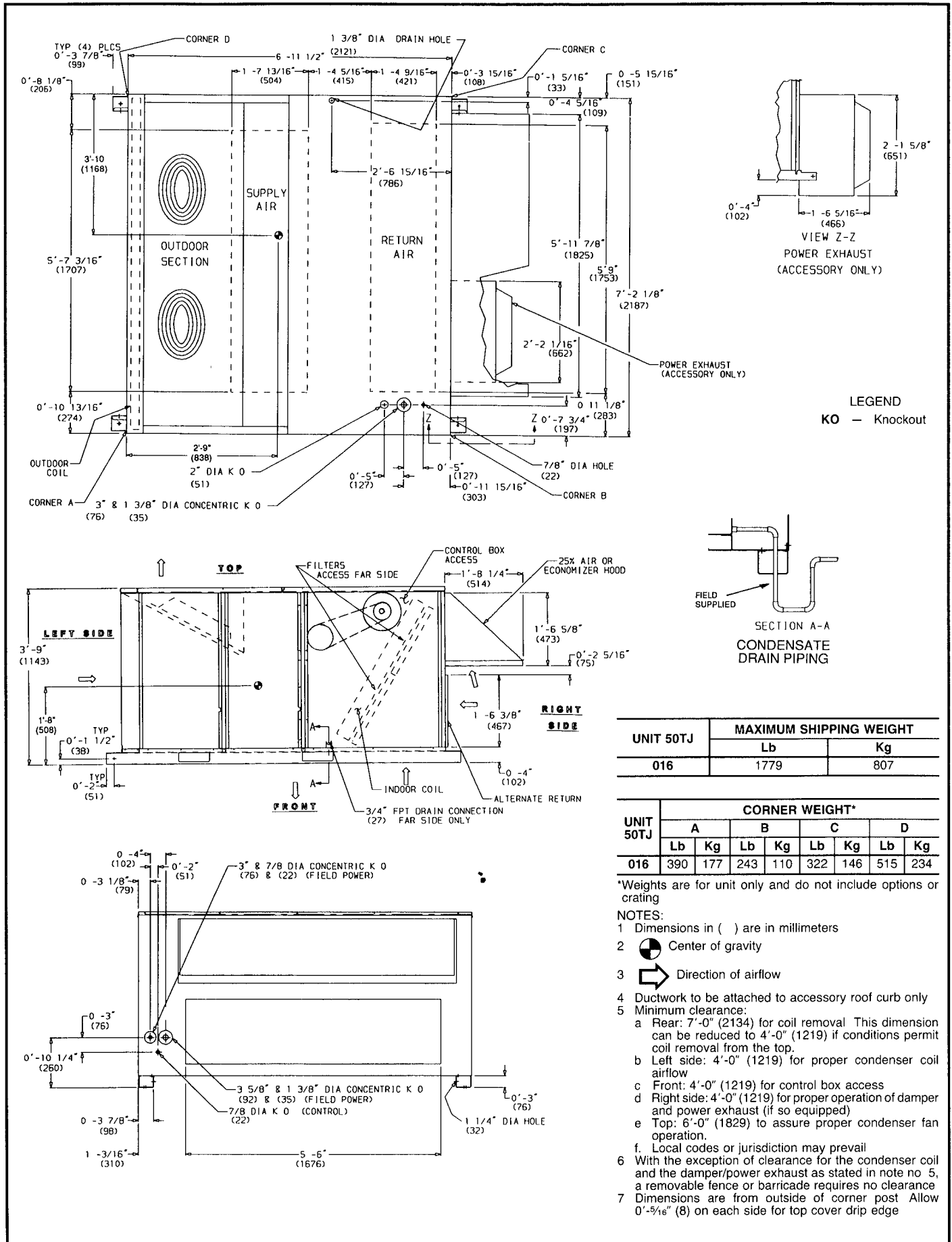
6 With the exception of the clearance for the condenser coil as stated in Notes 5a, b, and c, a removable fence or barricade requires no clearance

7 Units may be installed on combustible floors made from wood or Class A, B, or C roof covering material

CONNECTION SIZES	
A	1 5/8" Dia [35] Field Power Supply Hole
B	2 1/2" Dia [64] Power Supply Knockout
C	1 3/4" Dia [44] Charging Port Hole
D	7/8" Dia. [22] Field Control Wiring Hole
E	3/4"-14 NPT Condensate Drain
F	2" Dia [61] Power Supply Knockout



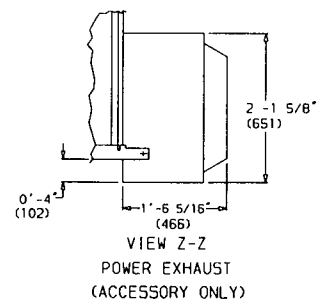
Base unit dimensions — 50TJ016



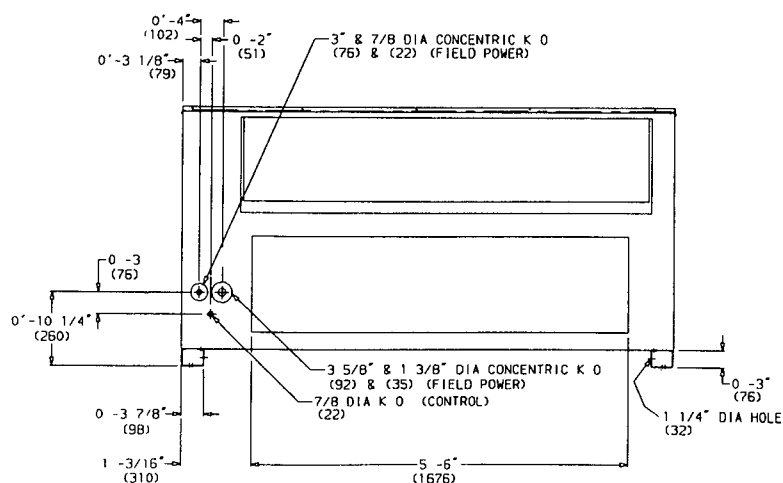
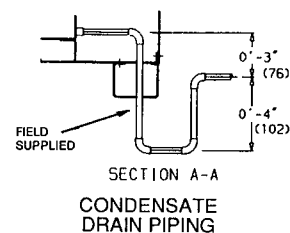
Carrier

*Weights are for unit only and do not include options or crating

UNIT 50TJ	MAXIMUM SHIPPING WEIGHT	
	Lb	Kg
020,024	2010	912
028	2394	1086



LEGEND
KO — Knockout



- 1 Dimensions in () are in millimeters
- 2 Center of gravity
- 3 Direction of airflow
- 4 Ductwork to be attached to accessory roof curb only
- 5 Minimum clearance:
 - a. Rear: 7'-0" (2134) for coil removal. This dimension can be reduced to 4'-0" (1219) if conditions permit coil removal from the top
 - b. Left side: 4'-0" (1219) for proper condenser coil airflow.
 - c. Front: 4'-0" (1219) for control box access
 - d. Right side: 4'-0" (1219) for proper operation of damper and power exhaust (if so equipped).
 - e. Top: 6'-0" (1829) to assure proper condenser fan operation
 - f. Local codes or jurisdiction may prevail
- 6 With the exception of clearance for the condenser coil and the damper/power exhaust as stated in note no 5, a removable fence or barricade requires no clearance
- 7 Dimensions are from outside of corner post. Allow 0'- $\frac{9}{16}$ " (8) on each side for top cover drip edge.

Accessory dimensions

Carrier®

ROOF CURB — 50TJ004-007

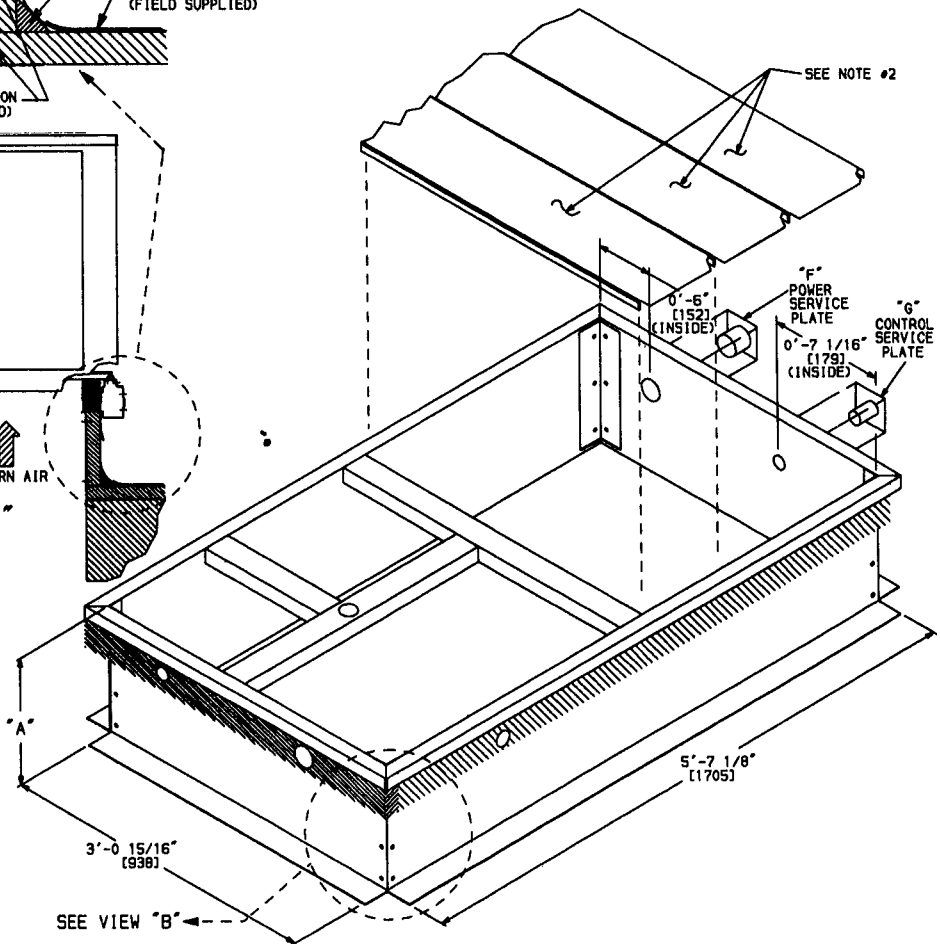
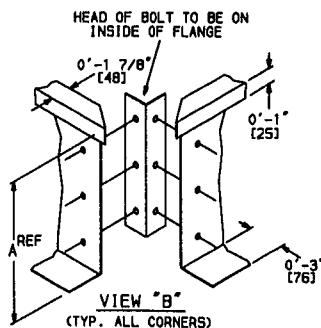
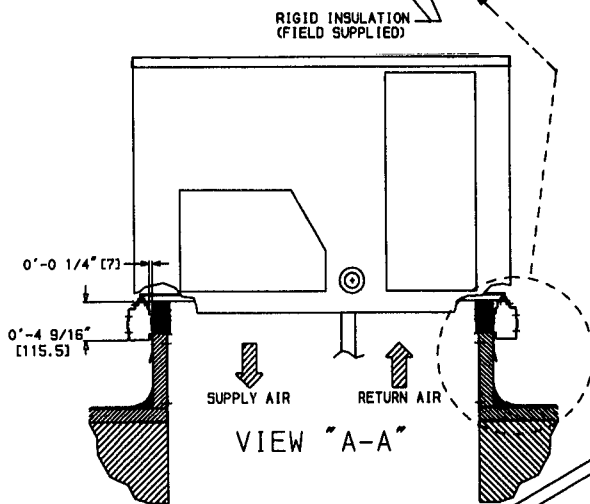
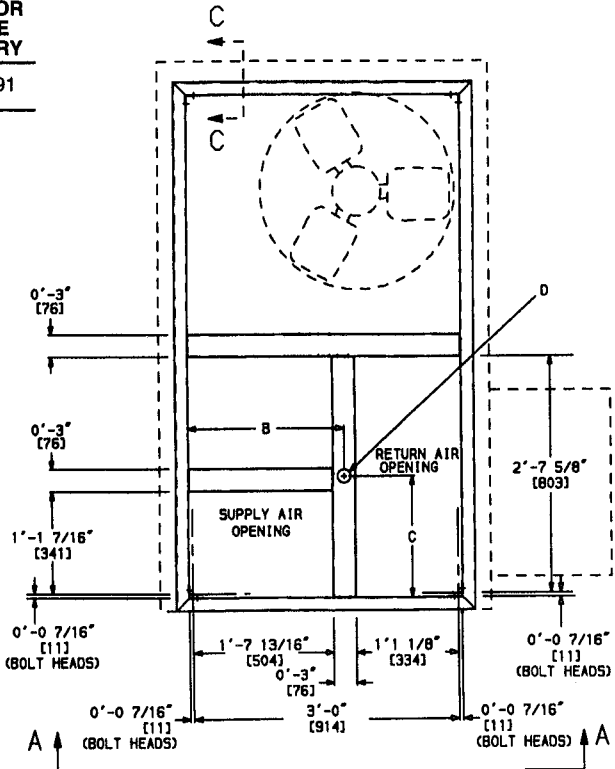
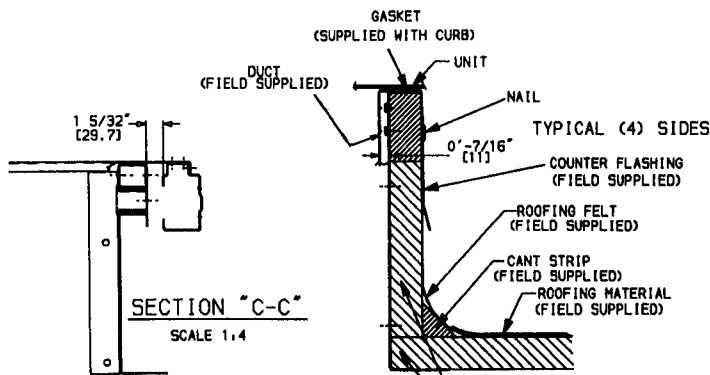
SERVICE PLATE SIZES

UNIT 50TJ	"B"	"C"	"D" ALT DRAIN HOLE	"F" POWER	"G" CONTROL	CONNECTOR PACKAGE ACCESSORY
004-007	1'-9 11/16" [551]	1'-4" [406]	1 3/4" [44.5]	3/4" NPT	3/4" NPT	50DJ900791

ROOF CURB ACCESSORY	"A"	UNIT 50TJ
50DJ900771	1'-2" [356]	004-007

NOTES:

1. Roof curb accessory is shipped unassembled.
2. Insulated panels.
3. Dimensions in [] are in millimeters.
4. Roof curb: galvanized steel.
5. Attach ductwork to curb (flanges of duct rest on curb).
6. Service clearance 4 ft on each side.
7.  Direction of airflow.



ROOF CURB — 50TJ008-014

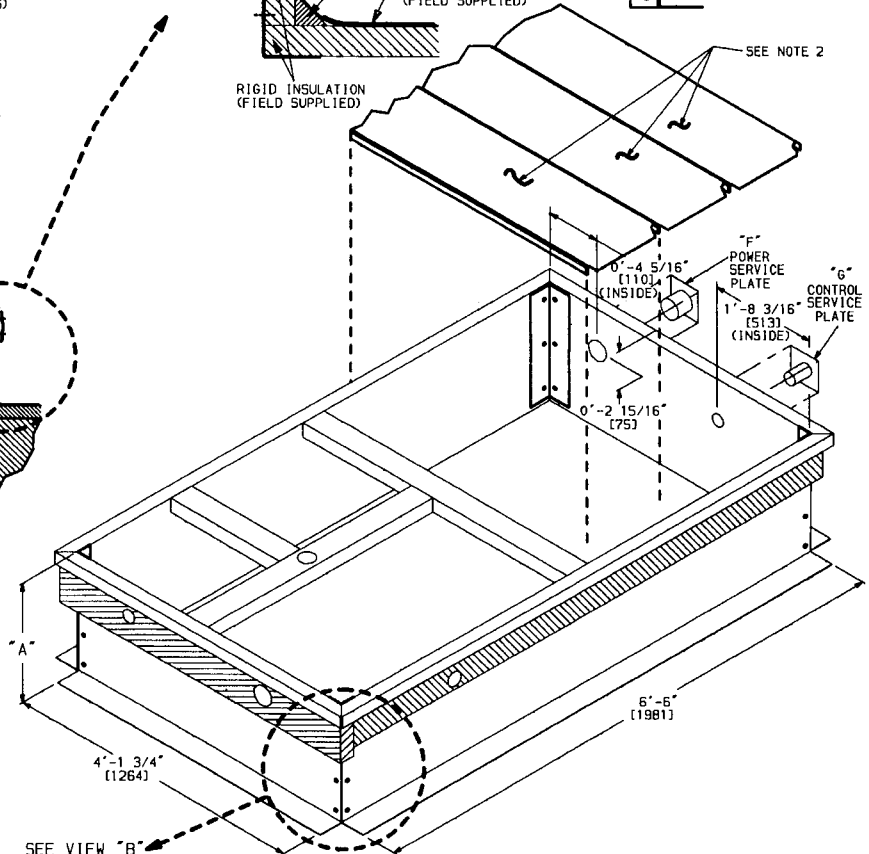
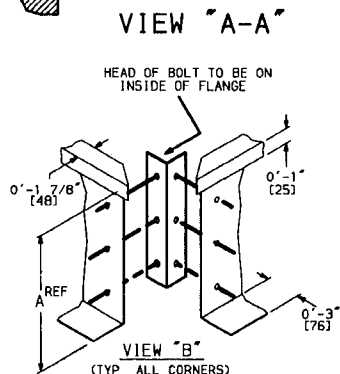
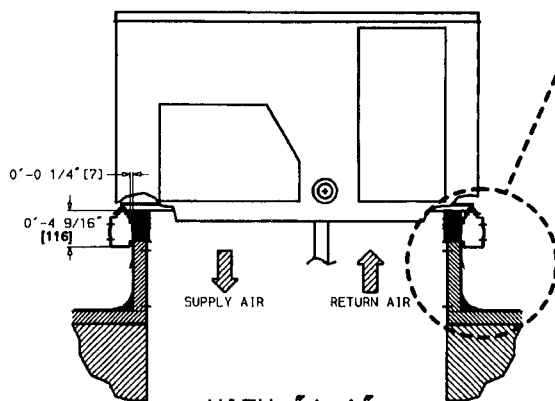
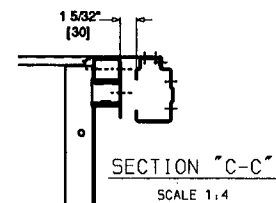
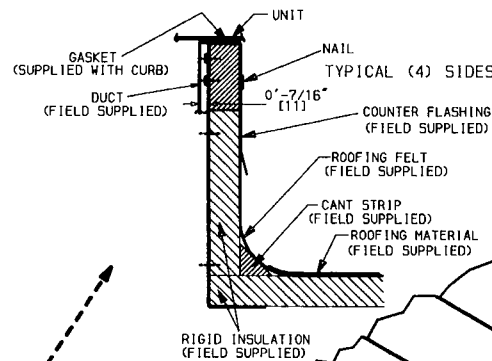
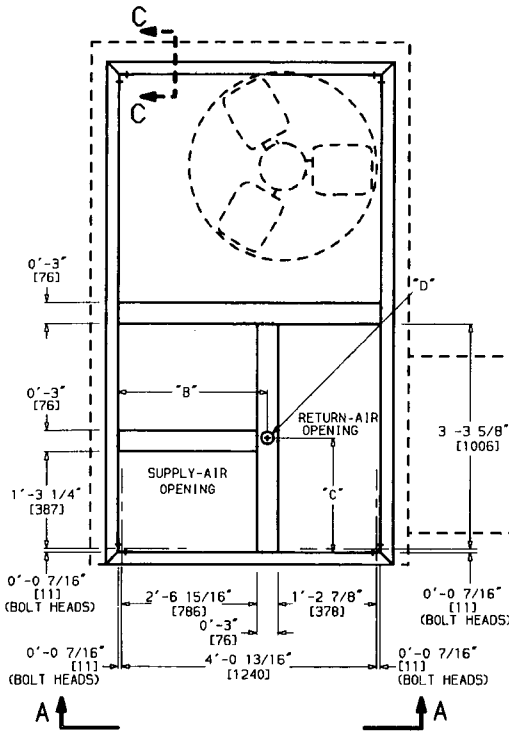
SERVICE PLATE SIZES

UNIT 50TJ	"B"	"C"	"D" ALT DRAIN HOLE	"F" POWER	"G" CONTROL	CONNECTOR PACKAGE ACCESSORY
008-014	2'-8 ⁷ / ₁₆ " [827]	1'-10 ⁵ / ₁₆ " [583]	1 ³ / ₄ " [44 5]	1" NPT or 2" NPT	3/4" NPT	50DJ901311

ROOF CURB ACCESSORY	"A"	UNIT 50TJ
50DJ901371	1'-2" [356]	008-014
50DJ901381	2'-0" [610]	

NOTES:

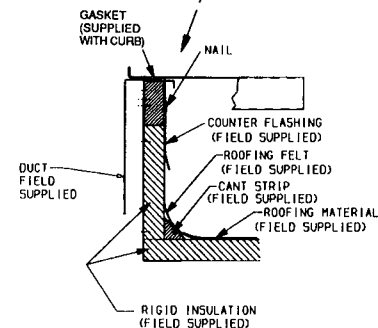
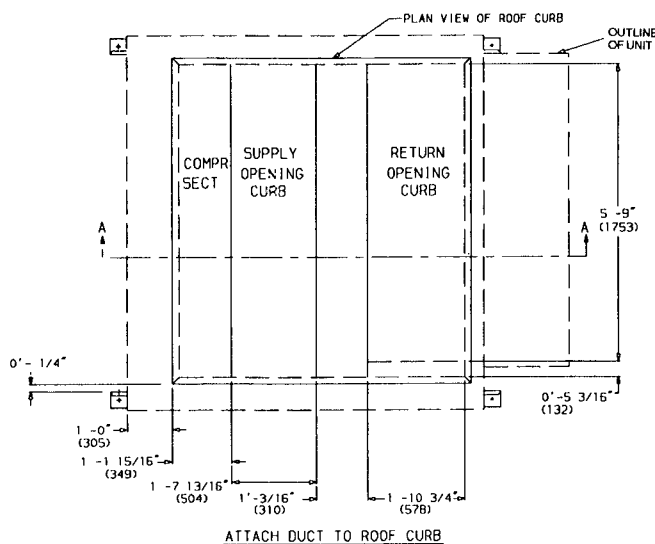
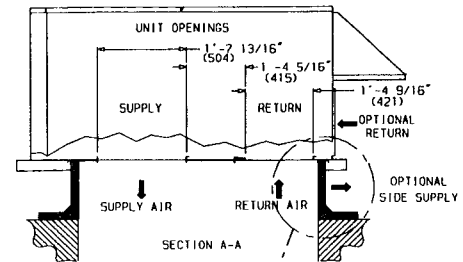
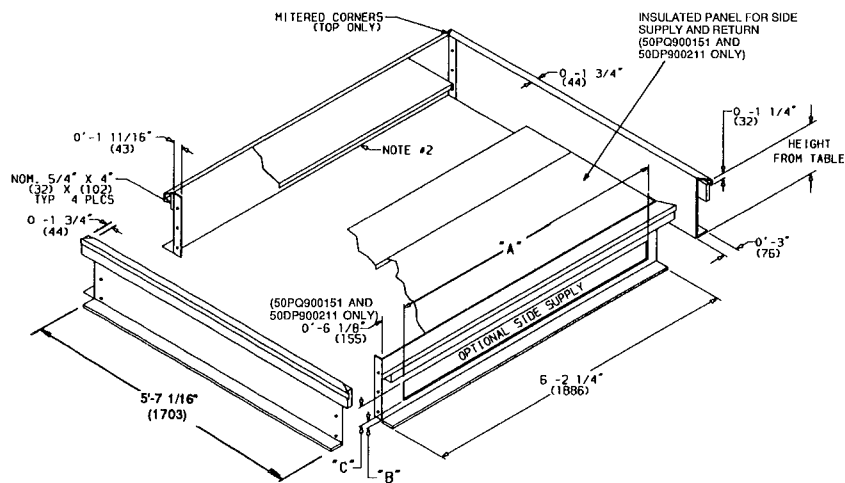
1. Roof curb accessory is shipped unassembled.
2. Insulated panels.
3. Dimensions in [] are in millimeters
4. Roof curb: galvanized steel.
5. Attach ductwork to curb (flanges of duct rest on curb).
6. Service clearance 4 ft on each side
7.  Direction of airflow



Accessory dimensions (cont)



ROOF CURB — 50TJ016-028



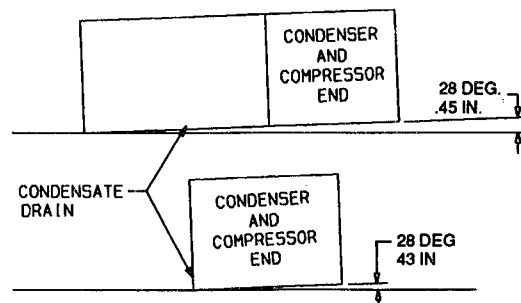
NOTE: To prevent the hazard of stagnant water build-up in the drain pan of the indoor-air section, unit can only be pitched as shown.

LEGEND

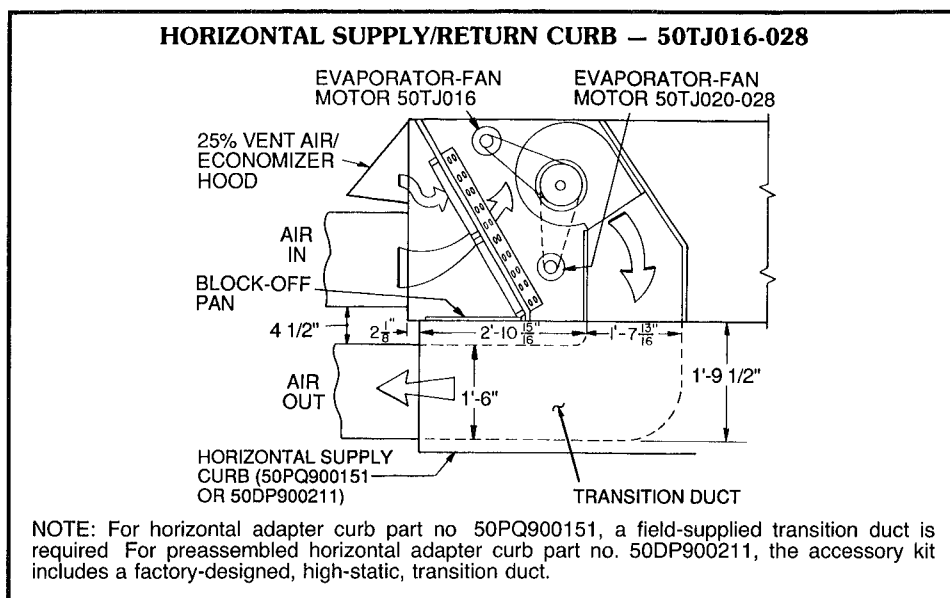
COMP SECT. — Compressor Section

NOTES:

1. Roof curb accessory is shipped unassembled.
2. Insulated panels, 1/2-in thick neoprene-coated, 2 lb density.
3. Dimensions in () are in millimeters.
4. Direction of airflow
5. Roof curb: 18 gage steel
6. Attach all ductwork to roof curb.



ACCESSORY PACKAGE NO.	CURB HEIGHT	DESCRIPTION	"A"	"B"	"C"
50PQ900221	1'-2" (305)	Standard Curb — 14" High	—	—	—
50PQ900141	2'-0" (610)	Standard Curb for Units Requiring High Installation	—	—	—
50PQ900151	2'-0" (610)	Horizontal Supply and Return Curb	5'-6" (1676)	0'-2 1/2" (64)	1'-6" (457)
50DP900211	1'-11" (584)	Pre-Assembled, High-Static, Horizontal Adapter Curb	6'-2" (1880)	0'-6 1/4" (159)	1'-2 5/8" (371)



Selection procedure (with 50TJ016 example)

I Determine cooling and heating requirements at design conditions:

Given:

Cooling Capacity Required 177,000 Btuh
Sensible Heat Capacity 127,000 Btuh
Condenser Entering-Air
Temperature 95 F Edb/78 F Ewb
Evaporator Entering-Air
Temperature 80 F Edb/67 F Ewb
Evaporator Air Quantity 6000 cfm
External Static Pressure 0.66 in. wg
Heating Capacity 76,000 Btuh
Power Supply (V-Ph-Hz) 230-3-60
Edb — Entering dry bulb
Ewb — Entering wet bulb

II Select unit based on required cooling capacity.

Enter cooling capacity table for 50TJ016 on page 20 at condenser entering dry bulb temperature 95 F, air entering evaporator at 6000 cfm, 80 F edb and 67 F ewb. The 50TJ016 unit will provide a total cooling capacity of 187,000 Btuh, and a sensible heating capacity of 137,000 Btuh. For evaporator-air temperatures other than 80 F edb, calculate sensible heat capacity correction as required using the formula in the notes following the Cooling Capacities tables.

NOTE: Unit ratings are gross capacities and do not include the effect of evaporator-fan motor heat. To calculate net capacities, see Step VI.

III Select electric heat.

Heating load required is 76,000 Btuh.

$$\frac{76,000 \text{ Btuh}}{3.414 \text{ Btu/W}} = 22,261 \text{ Watts of heat required}$$

$$= 22.3 \text{ kW}$$

Enter the Electric Resistance Heater Data table on page 46 for the 50TJ016 at 230-3-60. The 34 kW electric heater most closely satisfies the heat required.

IV Determine fan speed and motor horsepower requirements at design conditions.

Enter Accessory/FIOP Static Pressure Drop table on page 43 at selected unit size and heater kW.

Find that at given air quantity (6000 cfm), pressure loss is .09 in. wg.

Before entering the Fan Performance tables, calculate the total static pressure required based on unit components. From the given find:

External static pressure	0.66 in. wg
34 kW Heater static pressure	.09 in. wg
Total static pressure	0.75 in. wg

Enter Fan Performance table for unit 50TJ016 on page 38. At 6000 cfm and 0.75 in. wg external static pressure, the fan speed is 1184 rpm and the watts are 2653. (Interpolation is necessary.) The 3.7 hp motor is suitable.

V Determine net cooling capacity.

Cooling capacities are gross capacities and do not include indoor (evaporator) fan motor (IFM) heat. Use the watts input power to the motor.

IFM watts = 2653

Determine net cooling capacity using the following formula:

$$\begin{aligned} \text{Net capacity} &= \text{Gross capacity} - \text{IFM heat} \\ &= 187,000 \text{ Btuh} - 2653 \left(3.414 \frac{\text{Btuh}}{\text{Watt}} \right) \\ &= 187,000 \text{ Btuh} - 9057 \text{ Btuh} \\ &= 177,943 \text{ Btuh} \end{aligned}$$

$$\begin{aligned} \text{Net sensible capacity} &= 137,000 \text{ Btuh} - 9057 \text{ Btuh} \\ &= 127,943 \text{ Btuh} \end{aligned}$$

As demonstrated above, the 50TJ016 with the 34 kW electric heater meets the cooling capacity, sensible heating capacity, and heating capacity requirements.

NOTE: To obtain more sensible cooling, increase quantity of air entering evaporator.

Performance data



COOLING CAPACITIES

50TJ004 (3 TONS)

Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		900/0.11			1200/0.14			1500/0.17		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC SHC kW	42.8	38.9	35.0	44.8	40.8	37.0	45.8	41.9	38.2
		20.0	24.5	28.7	21.8	27.5	32.8	23.0	30.0	36.0
		2.91	2.81	2.70	2.99	2.88	2.78	3.02	2.92	2.82
85	TC SHC kW	40.8	36.9	33.3	42.5	38.7	35.0	43.6	39.9	36.1
		19.4	23.7	27.9	21.0	26.8	31.8	22.6	29.7	35.1
		3.14	3.01	2.90	3.20	3.08	2.97	3.24	3.14	3.02
95	TC SHC kW	38.7	34.9	31.4	40.4	36.6	33.0	41.4	37.6	34.1
		18.6	22.9	27.0	20.3	26.0	30.9	22.0	28.8	34.0
		3.35	3.21	3.09	3.42	3.29	3.16	3.47	3.35	3.22
105	TC SHC kW	36.5	32.8	29.2	38.1	34.3	30.9	39.0	35.2	32.4
		17.8	22.1	25.9	19.6	25.2	29.8	21.2	28.0	32.3
		3.55	3.41	3.27	3.63	3.49	3.35	3.68	3.54	3.43
115	TC SHC kW	34.3	30.7	26.9	35.7	32.1	28.8	36.5	32.9	30.6
		17.0	21.3	24.8	19.0	24.4	28.8	20.5	27.1	30.6
		3.76	3.60	3.45	3.84	3.68	3.54	3.88	3.74	3.64

50TJ006 (5 TONS)

Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		1500/0.07			2000/0.09			2500/0.12		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	71.0	63.8	55.4	74.5	67.2	59.2	76.5	69.7	62.1
	SHC	33.9	41.5	47.9	37.4	47.4	55.8	40.6	52.8	61.8
	kW	5.04	4.82	4.62	5.20	4.97	4.76	5.29	5.06	4.87
85	TC	69.2	61.0	54.2	72.9	65.6	57.2	75.2	68.1	61.5
	SHC	33.4	40.5	47.3	37.0	46.9	54.9	40.1	52.3	61.3
	kW	5.50	5.27	5.02	5.66	5.41	5.18	5.75	5.50	5.29
95	TC	65.5	56.6	50.4	69.4	60.9	53.1	71.2	63.3	57.8
	SHC	32.1	38.8	45.6	35.8	45.3	52.6	39.1	50.9	57.8
	kW	5.88	5.62	5.37	6.01	5.76	5.53	6.12	5.87	5.67
105	TC	61.9	53.1	47.1	65.4	56.6	50.5	67.1	58.8	54.5
	SHC	30.8	37.5	44.1	34.5	43.7	50.2	37.9	49.3	54.5
	kW	6.25	5.99	5.72	6.38	6.13	5.91	6.50	6.23	6.06
115	TC	58.2	49.7	43.7	61.4	52.3	47.8	63.0	54.3	51.2
	SHC	29.5	36.1	42.5	33.2	42.1	47.8	36.7	47.6	51.2
	kW	6.63	6.35	6.08	6.75	6.49	6.29	6.88	6.59	6.46

50TJ005 (4 TONS)

Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		1200/0.12			1600/0.15			2000/0.18		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	57.9	53.1	48.3	60.4	55.9	51.3	62.2	57.3	52.9
	SHC	27.2	33.3	39.2	29.4	37.2	44.8	31.4	40.3	49.1
	kW	4.07	3.93	3.79	4.17	4.03	3.90	4.24	4.08	3.96
85	TC	55.7	50.8	45.3	57.7	53.4	48.5	59.4	55.0	50.2
	SHC	26.4	32.5	37.8	28.4	36.7	43.6	30.5	40.3	47.9
	kW	4.40	4.24	4.08	4.47	4.35	4.20	4.54	4.42	4.25
95	TC	52.9	48.1	42.5	55.2	50.5	45.7	56.7	52.0	47.4
	SHC	25.5	31.5	36.4	27.6	35.6	42.2	29.7	39.2	46.7
	kW	4.70	4.54	4.36	4.78	4.63	4.47	4.87	4.70	4.56
105	TC	50.1	45.3	39.8	52.3	47.6	42.8	53.6	48.9	44.9
	SHC	24.4	30.3	35.1	26.7	34.5	40.7	28.8	38.1	44.6
	kW	5.00	4.81	4.62	5.10	4.91	4.73	5.17	4.99	4.84
115	TC	47.3	42.6	37.2	49.3	44.6	40.0	50.5	45.9	42.4
	SHC	23.4	29.2	33.7	25.9	33.3	39.3	27.8	37.1	42.4
	kW	5.30	5.07	4.88	5.42	5.19	4.99	5.48	5.28	5.12

50TJ007 (6 TONS)

Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		1800/0.06			2400/0.09			3000/0.11		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	86.6	80.0	73.6	90.8	84.1	77.2	93.2	86.6	79.7
	SHC	42.2	52.3	62.2	46.5	59.6	71.6	50.1	66.4	78.7
	kW	5.48	5.33	5.21	5.59	5.44	5.29	5.66	5.51	5.35
85	TC	84.1	77.4	71.0	87.8	81.2	74.5	90.1	83.5	77.3
	SHC	41.4	51.3	61.1	45.5	58.6	70.3	49.4	65.4	76.7
	kW	6.17	6.00	5.85	6.27	6.11	5.94	6.35	6.19	6.02
95	TC	81.6	74.7	68.5	84.8	78.2	71.8	87.0	80.4	74.8
	SHC	40.6	50.3	60.0	44.6	57.8	69.1	48.7	64.5	74.7
	kW	6.86	6.67	6.49	6.95	6.77	6.59	7.03	6.86	6.69
105	TC	78.4	71.8	65.6	81.6	74.9	68.9	83.3	76.9	72.1
	SHC	39.4	49.2	58.7	43.5	56.4	67.4	47.4	63.1	72.0
	kW	7.60	7.39	7.20	7.72	7.50	7.31	7.77	7.59	7.41
115	TC	75.1	68.7	62.5	78.0	71.5	66.1	79.5	73.3	69.3
	SHC	38.1	47.9	57.2	42.3	55.1	65.5	46.3	61.6	69.2
	kW	8.36	8.14	7.93	8.49	8.25	8.06	8.55	8.33	8.18

Standard Ratings

LEGEND

BF	—	Bypass Factor
Edb	—	Entering Dry-Bulb
Ewb	—	Entering Wet-Bulb
kW	—	Compressor Motor Power Input
Ldb	—	Leaving Dry-Bulb
Lwb	—	Leaving Wet-Bulb
SHC	—	Sensible Heat Capacity (1000 Btuh) Gross
TC	—	Total Capacity (1000 Btuh) Gross

NOTES:

- Direct interpolation is permissible. Do not extrapolate.
- The following formulas may be used:

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$$t_{lwb} = \text{Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h}_{lwb}\text{)}$$

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil

- The SHC is based on 80 F edb temperature of air entering evaporator coil

Below 80 F edb, subtract (corr factor x cfm) from SHC.
Above 80 F edb, add (corr factor x cfm) to SHC.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
	Correction Factor					
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible

$$\text{Correction Factor} = 1.10 \times (1 - \text{BF}) \times (\text{edb} - 80)$$

COOLING CAPACITIES (cont)

50TJ008 (7½ TONS)										
Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		2250/0.09			3000/0.012			3750/0.15		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	107.4	99.5	91.2	112.6	104.1	96.2	115.0	106.9	99.9
	SHC	53.2	66.5	78.9	59.1	75.9	91.2	63.6	84.4	99.8
	kW	7.25	6.91	6.57	7.49	7.13	6.78	7.59	7.26	6.95
85	TC	99.2	91.5	83.4	103.2	95.8	88.2	105.5	98.3	92.0
	SHC	49.6	62.1	73.4	54.3	70.7	84.7	58.7	58.3	91.9
	kW	7.67	7.35	7.01	7.86	7.54	7.22	7.97	7.66	7.39
95	TC	94.1	86.4	78.3	98.3	90.5	83.0	100.5	93.0	87.4
	SHC	47.8	60.0	71.0	53.0	69.3	81.8	57.6	76.7	87.4
	kW	8.18	7.84	7.50	8.40	8.05	7.72	8.51	8.16	7.92
105	TC	88.6	80.9	72.8	92.3	84.6	78.3	94.3	87.0	82.7
	SHC	46.0	57.8	68.1	51.2	66.7	77.6	55.8	74.5	82.6
	kW	8.69	8.32	7.98	8.89	8.52	8.21	9.00	8.65	8.44
115	TC	83.3	75.4	67.1	86.3	78.8	73.5	88.0	81.0	77.9
	SHC	44.0	55.7	65.4	49.3	64.5	73.5	54.1	72.3	77.8
	kW	9.20	8.80	8.46	9.38	8.99	8.71	9.48	9.12	8.95

50TJ012 (10 TONS)										
Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		3000/0.08			4000/0.11			5000/0.14		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC SHC kW	143.3	129.9	112.7	150.0	138.1	121.2	153.4	142.3	129.9
		70.1	86.0	99.2	77.2	98.1	115.6	83.9	109.6	128.5
		9.59	9.24	8.91	9.81	9.47	9.16	9.94	9.60	9.29
85	TC SHC kW	136.5	119.5	103.4	143.5	129.2	112.1	147.7	134.4	121.8
		67.8	82.2	94.9	74.9	95.4	110.8	81.4	107.2	121.7
		10.30	9.93	9.57	10.48	10.16	9.80	10.68	10.28	10.02
95	TC SHC kW	129.3	111.3	96.4	136.3	120.4	106.1	140.6	124.5	115.3
		65.3	79.0	91.3	72.7	92.3	106.1	78.9	104.4	115.2
		11.03	10.63	10.25	11.25	10.85	10.49	11.40	11.02	10.75
105	TC SHC kW	122.7	104.9	91.1	129.1	112.8	101.1	133.0	117.2	109.9
		62.9	76.5	88.2	70.3	89.8	101.1	76.8	101.4	109.8
		11.74	11.34	10.93	11.97	11.55	11.24	12.14	11.73	11.50
115	TC SHC kW	116.1	98.4	85.6	122.0	105.1	96.2	125.3	109.7	104.4
		60.4	73.9	85.2	67.8	86.8	96.1	74.6	98.4	104.4
		12.46	12.04	11.62	12.69	12.26	11.98	12.87	12.44	12.25

50TJ009 (8½ TONS)										
Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		2250/0.08			3000/0.10			4250/0.13		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	121.2	111.6	102.8	124.7	115.9	107.3	128.9	120.9	112.2
	SHC	58.8	71.9	85.0	62.1	78.4	94.8	68.0	89.3	107.4
	kW	7.88	7.60	7.35	7.98	7.72	7.49	8.12	7.89	7.63
85	TC	114.9	106.7	97.7	119.7	110.8	102.0	123.8	115.1	106.8
	SHC	55.7	70.0	82.7	60.6	76.8	92.2	66.6	87.4	104.4
	kW	8.46	8.21	7.91	8.64	8.34	8.06	8.79	8.50	8.24
95	TC	110.4	101.1	92.6	113.7	104.3	96.6	117.9	109.1	101.6
	SHC	54.6	67.5	80.3	58.4	74.3	89.7	64.8	85.3	100.3
	kW	9.14	8.78	8.48	9.26	8.93	8.64	9.43	9.10	8.84
105	TC	104.6	95.8	87.0	107.4	99.2	90.8	110.8	102.7	96.1
	SHC	52.6	65.4	78.1	56.1	72.6	86.5	62.3	82.7	95.2
	kW	9.74	9.37	8.98	9.86	9.53	9.16	10.02	9.68	9.40
115	TC	97.6	89.8	81.7	101.3	92.6	85.2	104.2	96.0	90.8
	SHC	49.6	62.9	75.3	54.1	69.5	83.3	60.2	79.7	90.3
	kW	10.24	9.88	9.49	10.45	10.02	9.69	10.61	10.20	9.96

 Standard Ratings

LEGEND

BF	—	Bypass Factor
Edb	—	Entering Dry-Bulb
Ewb	—	Entering Wet-Bulb
kW	—	Compressor Motor Power Input
Ldb	—	Leaving Dry-Bulb
Lwb	—	Leaving Wet-Bulb
SHC	—	Sensible Heat Capacity (1000 Btuh) Gross
TC	—	Total Capacity (1000 Btuh) Gross

NOTES:

1. Direct interpolation is permissible. Do not extrapolate.
2. The following formulas may be used:

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$$t_{lwb} = \text{Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h}_{lwb}\text{)}$$

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil

50TJ014 (12½ TONS)										
Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		3750/0.10			5000/0.12			6250/0.15		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC SHC kW	173.7	161.4	145.7	181.0	168.5	154.3	184.0	173.4	161.3
		85.4	106.6	125.7	93.1	120.7	145.4	101.1	134.2	159.8
		10.88	10.64	10.41	11.07	10.80	10.58	11.14	10.92	10.66
85	TC SHC kW	168.5	156.4	140.1	175.6	163.4	148.6	179.3	167.8	156.6
		83.6	104.7	123.1	91.7	119.2	142.4	99.9	132.7	155.7
		12.15	11.89	11.59	12.34	12.06	11.78	12.45	12.17	11.90
95	TC SHC kW	163.5	151.5	134.6	170.0	158.3	142.9	174.6	162.2	152.0
		81.9	102.9	120.6	90.3	117.7	139.4	98.6	131.1	151.7
		13.41	13.14	12.77	13.60	13.32	12.98	13.76	13.43	13.14
105	TC SHC kW	157.2	144.3	127.8	163.5	151.1	136.1	167.7	155.4	145.8
		79.6	100.1	117.3	88.3	115.2	134.0	96.2	128.8	145.7
		14.82	14.50	14.09	15.02	14.71	14.37	15.17	14.84	14.55
115	TC SHC kW	150.5	136.7	121.5	156.5	142.5	129.0	160.4	147.0	138.6
		77.3	97.1	114.2	86.0	112.0	128.2	94.1	125.6	138.6
		16.30	15.92	15.46	16.50	16.15	15.82	16.65	16.29	16.02

3. The SHC is based on 80 F edb temperature of air entering evaporator coil

Below 80 F edb, subtract (corr factor x cfm) from SHC.
Above 80 F edb, add (corr factor x cfm) to SHC.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
Correction Factor						
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible

$$\text{Correction Factor} = 1.10 \times (1 - \text{BF}) \times (\text{edb} - 80).$$

Performance data (cont)



COOLING CAPACITIES (cont)

50TJ016 (15 TONS)										
Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF								
		4500/0.06			6000/0.08			7500/0.10		
		Air Entering Evaporator — Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	190.0	176.0	165.0	194.0	181.0	169.0	199.0	186.0	171.0
	SHC	88.9	111.6	135.9	97.2	126.9	155.7	104.4	140.4	170.1
	kW	16.20	15.80	15.40	16.30	16.00	15.60	16.70	16.20	15.80
85	TC	204.0	187.0	169.0	210.0	194.0	177.0	215.0	199.0	184.0
	SHC	97.4	122.0	145.0	106.0	139.0	168.0	115.0	154.0	183.0
	kW	15.90	15.40	14.90	16.10	15.70	15.20	16.40	15.90	15.50
95	TC	197.0	179.0	155.0	204.0	187.0	166.0	209.0	191.0	178.0
	SHC	96.0	120.0	139.0	104.0	137.0	163.0	114.0	152.0	177.0
	kW	17.20	16.60	15.90	17.50	17.00	16.40	17.80	17.20	16.80
105	TC	189.0	169.0	142.0	197.0	178.0	155.0	200.0	182.0	169.0
	SHC	92.9	116.0	132.0	103.0	134.0	154.0	112.0	150.0	169.0
	kW	18.50	17.80	17.10	18.90	18.30	17.60	19.10	18.50	18.00
115	TC	180.0	154.0	128.0	186.0	163.0	144.0	191.0	170.0	158.0
	SHC	90.2	110.0	125.0	101.0	129.0	144.0	111.0	146.0	158.0
	kW	19.90	19.00	18.30	20.20	19.40	18.90	20.50	19.70	19.30
125	TC	154.0	125.0	103.0	158.0	133.0	120.0	164.0	142.0	132.0
	SHC	78.8	93.6	106.2	89.1	111.6	120.6	99.0	127.8	132.0
	kW	23.70	22.40	21.70	23.90	22.80	22.40	24.30	23.20	22.90

50TJ020 (18 TONS)													
Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF											
		5000/0.045			6000/0.06			7000/0.075			8000/0.085		
		Air Entering Evaporator — Ewb (F)											
		72	67	62	72	67	62	72	67	62	72	67	62
75	TC	238.0	217.0	198.0	242.0	222.0	203.0	247.0	228.0	207.0	251.0	231.0	211.0
	SHC	110.0	137.0	161.0	116.0	147.0	175.0	122.0	156.0	189.0	128.0	166.0	201.0
	kW	15.90	15.60	15.10	16.00	15.70	15.30	16.10	15.70	15.40	16.20	15.90	15.50
85	TC	232.1	210.2	188.4	235.7	214.8	193.8	239.3	219.3	199.3	242.1	225.7	203.8
	SHC	108.8	132.8	156.1	114.2	143.5	170.8	119.6	154.2	185.5	125.6	166.5	197.7
	kW	17.34	16.96	16.46	17.48	17.13	16.63	17.62	17.29	16.81	17.74	17.34	16.96
95	TC	223.0	202.9	179.5	227.5	206.6	184.8	232.1	210.2	190.1	235.7	218.4	195.0
	SHC	105.8	129.9	153.3	112.0	140.6	167.2	118.2	151.2	181.0	124.5	163.8	193.2
	kW	18.96	18.50	17.82	19.12	18.64	18.01	19.28	18.77	18.20	19.43	18.83	18.37
105	TC	212.0	192.0	167.5	216.6	196.6	172.6	221.1	201.1	177.7	225.7	203.8	184.6
	SHC	101.9	125.9	147.7	108.6	136.9	161.5	115.2	147.9	175.4	121.7	158.4	184.6
	kW	20.48	19.93	19.09	20.66	20.11	19.38	20.84	20.29	19.67	20.93	20.48	19.96
115	TC	202.9	178.0	153.2	206.6	183.5	159.8	210.2	188.9	166.3	212.9	192.4	174.6
	SHC	98.3	120.8	144.1	105.0	132.2	155.2	111.7	143.6	166.2	118.1	154.3	174.6
	kW	21.84	21.20	20.48	22.11	21.48	20.84	22.39	21.75	21.20	22.48	21.93	21.48
125	TC	192.0	168.0	141.0	195.0	173.0	149.0	198.0	179.0	158.0	201.0	181.0	167.0
	SHC	95.0	117.0	140.0	101.0	128.0	149.0	107.0	139.0	158.0	114.0	150.0	167.0
	kW	23.30	22.60	21.80	23.50	22.80	22.20	23.70	22.90	22.60	23.80	23.10	22.80

Standard ratings

LEGEND

- BF — Bypass Factor
- Edb — Entering Dry-Bulb
- Ewb — Entering Wet-Bulb
- kW — Compressor Motor Power Input
- Ldb — Leaving Dry-Bulb
- Lwb — Leaving Wet-Bulb
- SHC — Sensible Heat Capacity (1000 Btuh) Gross
- TC — Total Capacity (1000 Btuh) Gross

NOTES:

- Direct interpolation is permissible. Do not extrapolate.
- The following formulas may be used:

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$$t_{lwb} = \text{Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil (h}_{lwb}\text{)}$$

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil

- SHC is based on 80 F edb temperature of air entering evaporator coil.

Below 80 F edb, subtract (corr factor x cfm) from SHC.

Above 80 F edb, add (corr factor x cfm) to SHC.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
Correction Factor						
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible.

$$\text{Correction Factor} = 1.10 \times (1 - \text{BF}) \times (\text{edb} - 80)$$

COOLING CAPACITIES (cont)

50TJ024 (20 TONS)													
Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF											
		6000/0.06			7000/0.075			8000/0.085			9000/0.095		
		Air Entering Evaporator — Ewb (F)											
		72	67	62	72	67	62	72	67	62	72	67	62
75	TC	266.0	244.0	223.0	228.0	250.0	271.0	276.0	254.0	232.0	236.0	257.0	276.0
	SHC	127.5	161.0	192.6	207.9	171.8	133.8	140.7	182.4	221.0	233.0	192.2	147.3
	kW	17.55	17.20	16.79	16.94	17.30	17.68	17.80	17.42	17.04	17.14	17.50	17.80
85	TC	259.0	236.0	213.0	263.0	241.0	219.0	266.0	248.0	224.0	269.0	252.0	229.0
	SHC	125.5	157.7	187.7	131.4	169.5	203.9	138.0	183.0	217.3	145.0	193.0	227.0
	kW	19.21	18.82	18.28	19.36	19.00	18.47	19.49	19.06	18.64	19.56	19.17	18.81
95	TC	250.0	227.0	203.1	255.0	231.0	208.9	259.0	240.0	214.3	262.0	246.0	220.0
	SHC	123.1	154.5	183.7	129.9	166.2	198.9	136.8	180.0	212.3	142.7	189.0	220.0
	kW	21.01	20.48	19.79	21.19	20.63	20.00	21.35	20.69	20.19	21.48	20.82	20.48
105	TC	238.0	216.0	189.7	243.0	221.0	195.3	248.0	224.0	202.9	250.0	226.0	210.9
	SHC	119.3	150.4	177.5	126.6	162.5	192.7	133.7	174.1	202.9	140.0	184.8	210.9
	kW	22.70	22.10	21.30	22.90	22.30	21.62	23.00	22.50	21.93	23.20	21.60	22.12
115	TC	227.0	201.6	175.6	231.0	207.6	182.8	234.0	211.4	191.9	237.0	214.6	200.1
	SHC	115.4	145.3	170.5	122.8	157.8	182.6	129.8	169.6	191.9	136.5	180.2	200.1
	kW	24.30	23.60	22.90	24.60	23.90	23.30	24.70	24.10	23.60	24.90	24.10	23.80
125	TC	214.3	190.5	164.2	218.0	196.2	173.6	221.0	198.8	184.0	223.0	200.7	191.0
	SHC	111.0	141.0	163.8	117.9	153.2	173.6	125.4	164.4	184.0	131.6	174.9	191.0
	kW	25.80	25.00	24.40	26.00	25.20	24.80	26.20	25.40	25.00	26.40	25.50	25.30

50TJ028 (25 TONS)													
Temp (F) Air Entering Condenser (Edb)		Air Entering Evaporator — Cfm/BF											
		7000/0.03			8750/0.05			10,000/0.07			11,250/0.09		
		Air Entering Evaporator — Ewb (F)											
		72	67	62	72	67	62	72	67	62	72	67	62
75	TC	323.9	299.4	275.8	331.3	312.7	288.4	336.1	319.8	294.7	342.6	322.5	300.0
	SHC	159.4	195.2	230.6	170.1	216.5	259.1	177.6	231.1	276.8	186.6	242.9	292.6
	kW	21.10	20.50	19.90	21.30	20.90	20.20	21.50	21.10	20.40	21.70	21.20	20.50
85	TC	315.3	290.4	264.3	326.9	303.2	278.0	333.7	309.1	285.0	335.1	314.2	291.1
	SHC	156.3	191.7	224.9	168.4	213.2	254.9	177.5	226.9	273.8	184.4	240.7	288.4
	kW	22.70	22.10	21.30	23.10	22.50	21.80	23.30	22.70	22.00	23.30	22.80	22.20
95	TC	304.1	277.4	243.1	315.3	290.1	263.8	320.4	295.6	271.1	324.1	300.6	279.4
	SHC	152.0	186.5	215.2	165.0	208.5	248.0	173.0	222.4	266.4	181.6	236.5	279.4
	kW	24.80	24.00	23.20	25.20	24.50	23.50	25.40	24.60	23.80	25.50	24.80	24.10
105	TC	291.2	261.4	224.8	300.9	274.2	242.1	305.7	280.3	252.3	309.8	284.8	266.3
	SHC	147.2	179.7	206.6	159.9	201.8	237.3	168.3	216.8	252.3	176.8	231.1	266.3
	kW	26.90	25.80	25.00	27.20	26.30	25.40	27.40	26.60	25.80	27.60	26.80	26.00
115	TC	274.6	237.9	207.6	285.9	251.5	222.6	291.3	258.4	237.7	293.9	267.5	247.1
	SHC	140.9	170.0	198.6	154.9	193.2	222.6	164.1	208.7	237.7	163.0	224.3	247.1
	kW	28.80	27.80	26.80	29.40	28.20	27.40	29.60	28.50	27.70	29.70	28.50	28.10
125	TC	254.5	214.9	184.3	266.7	230.9	206.7	272.0	236.0	220.8	276.1	240.0	231.1
	SHC	133.3	160.8	184.3	148.0	185.1	206.7	157.5	200.2	220.8	166.6	214.4	231.1
	kW	30.90	29.90	28.90	31.40	30.20	29.60	31.70	30.50	29.90	31.90	30.80	30.30

LEGEND

BF — Bypass Factor
 Edb — Entering Dry-Bulb
 Ewb — Entering Wet-Bulb
 kW — Compressor Motor Power Input
 Ldb — Leaving Dry-Bulb
 Lwb — Leaving Wet-Bulb
 SHC — Sensible Heat Capacity (1000 Btuh) Gross
 TC — Total Capacity (1000 Btuh) Gross

NOTES:

- Direct interpolation is permissible. Do not extrapolate
- The following formulas may be used:

$$t_{ldb} = t_{edb} - \frac{\text{sensible capacity (Btuh)}}{1.10 \times \text{cfm}}$$

$$t_{lwb} = \text{Wet-bulb temperature corresponding to enthalpy of air leaving evaporator coil } (h_{lwb})$$

$$h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{cfm}}$$

Where: h_{ewb} = Enthalpy of air entering evaporator coil

- The SHC is based on 80 F edb temperature of air entering evaporator coil

Below 80 F edb, subtract (corr factor x cfm) from SHC.
Above 80 F edb, add (corr factor x cfm) to SHC.

BYPASS FACTOR (BF)	ENTERING AIR DRY-BULB TEMP (F)					
	79	78	77	76	75	under 75
	81	82	83	84	85	over 85
.05	1.04	2.07	3.11	4.14	5.18	Use formula shown below.
.10	.98	1.96	2.94	3.92	4.90	
.20	.87	1.74	2.62	3.49	4.36	
.30	.76	1.53	2.29	3.05	3.82	

Interpolation is permissible

$$\text{Correction Factor} = 1.10 \times (1 - \text{BF}) \times (\text{edb} - 80)$$

Performance data (cont)



FAN PERFORMANCE — VERTICAL DISCHARGE UNITS

50TJ004 (3 TONS) — STANDARD MOTOR (DIRECT DRIVE)												
Airflow (Cfm)	Low Speed						High Speed					
	208 v			230, 460, 575 v			208 v			230, 460, 575 v		
	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts
900	0.67	0.21	253	0.68	0.23	277	0.69	0.26	307	0.69	0.31	363
1000	0.60	0.23	270	0.61	0.25	292	0.61	0.27	321	0.63	0.32	374
1100	0.55	0.24	287	0.56	0.26	307	0.57	0.28	335	0.58	0.33	385
1200	0.51	0.26	304	0.51	0.27	323	0.52	0.29	349	0.53	0.34	397
1300	0.45	0.27	321	0.46	0.29	338	0.46	0.31	364	0.47	0.34	408
1400	0.38	0.29	338	0.41	0.30	354	0.43	0.32	378	0.43	0.35	420
1500	0.34	0.30	355	0.36	0.31	369	0.38	0.33	392	0.39	0.36	431

LEGEND

Bhp — Brake Horsepower Input to Fan
ESP — External Static Pressure (in. wg)
Watts — Input Watts to Motor

NOTES:

1. Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.

- Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.
- Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative to verify.

50TJ004 (3 TONS) – ALTERNATE MOTOR (BELT DRIVE)																		
Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.1			0.2			0.3			0.4			0.5			0.6		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
900	581	0.12	119	673	0.18	179	736	0.22	219	805	0.25	249	865	0.29	288	911	0.34	338
1000	644	0.19	189	709	0.22	219	782	0.28	279	835	0.30	298	900	0.35	348	937	0.38	378
1100	687	0.22	219	746	0.26	259	806	0.30	298	867	0.35	348	929	0.40	398	964	0.40	398
1200	733	0.26	259	785	0.32	318	843	0.35	348	903	0.41	408	960	0.47	467	994	0.50	497
1300	754	0.29	288	826	0.38	378	891	0.43	428	942	0.48	477	991	0.53	527	1047	0.60	597
1400	810	0.35	348	868	0.45	448	937	0.51	507	984	0.57	567	1032	0.62	617	1067	0.67	666
1500	841	0.42	418	911	0.53	527	985	0.61	607	1029	0.66	656	1073	0.72	716	1109	0.77	766

50TJ004 (3 TONS) — ALTERNATE MOTOR (BELT DRIVE)																		
Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.7			0.8			0.9			1.0			1.1			1.2		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
900	957	0.39	388	988	0.43	428	1039	0.45	448	1061	0.47	487	1083	0.53	527	1105	0.57	567
1000	992	0.44	438	1039	0.49	487	1061	0.51	507	1086	0.55	547	1111	0.59	587	1136	0.63	627
1100	1013	0.49	487	1068	0.55	547	1090	0.58	577	1109	0.61	607	1127	0.64	637	1145	0.67	666
1200	1045	0.56	557	1090	0.64	637	1109	0.64	647	1156	0.68	676	1203	0.71	706	1250	0.74	736
1300	1075	0.64	637	1122	0.70	696	1152	0.72	716	1190	0.76	756	1228	0.80	796	1266	0.84	836
1400	1110	0.73	726	1160	0.84	766	1181	0.81	806	1237	0.85	845	1293	0.89	885	1349	0.93	925
1500	1150	0.82	816	1190	1.00	855	1225	0.90	895	1271	0.95	945	1317	1.00	995	1363	1.05	1044

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- Shading** indicates a field-supplied drive is required. (See Note 6.)
- Shading** indicates field-supplied motor and drive are required.
- Maximum usable watts input is 1000 and maximum continuous bhp is 1.00. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

- Values include losses for filters, unit casings, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Alternate motor drive range: 760 to 1000 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate.

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

50TJ005 (4 TONS) — STANDARD MOTOR (DIRECT DRIVE)												
Airflow (Cfm)	Low Speed						High Speed					
	208 v			230, 460, 575 v			208 v			230, 460, 575 v		
	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts
1200	0.93	0.41	458	0.94	0.45	506	0.94	0.51	572	0.99	0.56	632
1300	0.86	0.42	471	0.87	0.46	521	0.87	0.52	589	0.92	0.58	651
1400	0.78	0.45	503	0.79	0.49	556	0.79	0.54	616	0.87	0.60	681
1500	0.70	0.47	536	0.73	0.52	593	0.73	0.56	631	0.80	0.62	698
1600	0.61	0.49	557	0.64	0.54	616	0.66	0.58	654	0.76	0.64	723
1700	0.51	0.52	584	0.54	0.57	646	0.58	0.60	678	0.68	0.66	750
1800	0.40	0.54	610	0.44	0.60	674	0.51	0.62	698	0.63	0.68	772
1900	0.29	0.56	629	0.37	0.62	696	0.46	0.64	720	0.56	0.70	796
2000	0.25	0.58	651	0.30	0.64	720	0.39	0.66	744	0.50	0.73	823

LEGEND

Bhp — Brake Horsepower Input to Fan
ESP — External Static Pressure (in wg)
Watts — Input Watts to Motor

NOTES:

- Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your

fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

- Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative to verify.

50TJ005 (4 TONS) — ALTERNATE MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)																				
	0.1			0.2			0.3			0.4			0.6			0.7			0.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1200	542	0.16	168	616	0.21	221	678	0.27	278	739	0.32	336	842	0.44	462	886	0.50	525	929	0.56	588
1300	576	0.20	210	644	0.25	263	704	0.31	326	764	0.37	389	867	0.50	525	910	0.56	588	952	0.62	651
1400	610	0.24	252	673	0.30	315	732	0.36	378	791	0.42	441	889	0.55	578	933	0.62	651	976	0.69	725
1500	646	0.28	294	704	0.35	368	761	0.42	436	818	0.48	504	912	0.61	641	957	0.69	720	1001	0.76	777
1600	681	0.33	347	735	0.40	420	790	0.47	494	845	0.54	567	920	0.68	695	931	0.76	772	1023	0.83	848
1700	718	0.39	410	768	0.46	483	836	0.54	562	873	0.61	641	965	0.76	777	1005	0.84	853	1045	0.91	930
1800	754	0.45	473	801	0.53	557	851	0.61	641	900	0.69	725	992	0.84	858	1032	0.92	940	1071	1.00	1022
1900	791	0.52	546	836	0.60	630	832	0.69	720	828	0.77	809	1019	0.93	950	1058	1.02	1037	1097	1.10	1124
2000	828	0.60	630	870	0.68	714	864	0.77	809	858	0.86	904	1046	1.03	1053	1095	1.12	1139	1124	1.21	1237

50TJ005 (4TONS) — ALTERNATE MOTOR (BELT DRIVE) (cont)

Airflow (Cfm)	External Static Pressure (in. wg)																	
	1.0			1.1			1.2			1.4			1.6			1.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1200	1008	0.67	704	1052	0.73	762	1096	0.78	820	1134	0.89	835	1203	1.00	885	—	—	—
1300	1029	0.75	788	1065	0.81	846	1101	0.86	904	1174	1.01	1040	1229	1.15	1100	1277	1.27	1029
1400	1052	0.83	826	1087	0.90	890	1121	0.96	918	1183	1.09	1042	1255	1.22	1167	1305	1.38	1190
1500	1076	0.91	905	1111	0.99	980	1145	1.06	1014	1208	1.20	1138	1274	1.33	1272	1337	1.47	1350
1600	1100	1.00	995	1134	1.08	1069	1168	1.15	1100	1232	1.31	1253	1291	1.46	1396	1350	1.60	1558
1700	1124	1.09	1084	1158	1.17	1164	1192	1.25	1196	1255	1.42	1358	1314	1.58	1511	1370	1.77	1738
1800	1147	1.18	1174	1182	1.27	1263	1217	1.36	1301	1279	1.54	1473	1381	1.71	1635	1393	1.89	1907
1900	1169	1.27	1263	1205	1.37	1363	1240	1.47	1406	1303	1.66	1568	1408	1.85	1769	1417	2.03	2068
2000	1194	1.38	1372	1228	1.48	1472	1262	1.58	1511	1327	1.78	1702	1436	1.98	1894	1440	2.18	2229

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied drive is required. (See Note 6.)
- Shading** indicates field-supplied motor and drive are required.
- Maximum usable watts input is 1000 and maximum continuous bhp is 1.00. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

- Values include losses for filters, unit casings, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Alternate motor drive range: 835 to 1185 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate.

Performance data (cont)



FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

50TJ006 (5 TONS) — STANDARD MOTOR (DIRECT DRIVE)

Airflow (Cfm)	Low Speed						Medium Speed						High Speed					
	208 v			230, 460, 575 v			208 v			230, 460, 575 v			208 v			230, 460, 575 v		
	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts
1500	0.88	0.67	750	1.20	0.71	791	1.19	0.70	782	1.36	0.76	845	1.38	0.79	875	1.44	0.85	949
1600	0.68	0.70	780	1.04	0.74	824	1.04	0.74	821	1.22	0.79	883	1.25	0.82	913	1.33	0.89	988
1700	0.51	0.73	810	0.89	0.77	857	0.89	0.77	861	1.09	0.83	921	1.13	0.85	950	1.22	0.92	1027
1800	0.35	0.75	839	0.73	0.80	891	0.74	0.81	900	0.96	0.86	959	1.00	0.89	988	1.11	0.96	1066
1900	0.26	0.78	873	0.58	0.83	924	0.59	0.84	940	0.86	0.90	997	0.88	0.92	1025	1.00	0.99	1105
2000	0.18	0.81	905	0.42	0.86	957	0.44	0.88	979	0.73	0.93	1035	0.78	0.95	1063	0.92	1.03	1144
2100	0.08	0.84	940	0.27	0.89	990	0.29	0.91	1018	0.59	0.96	1073	0.63	0.99	1101	0.81	1.06	1183
2200	—	—	—	0.19	0.92	1023	0.19	0.93	1035	0.46	1.00	1111	0.49	1.02	1138	0.69	1.10	1222
2300	—	—	—	0.11	0.95	1056	0.11	0.97	1076	0.34	1.03	1149	0.41	1.06	1176	0.59	1.13	1261
2400	—	—	—	0.03	0.98	1096	0.04	1.00	1113	0.19	1.07	1187	0.22	1.09	1213	0.43	1.17	1300
2500	—	—	—	—	—	—	—	—	—	0.09	1.10	1225	0.12	1.12	1251	0.34	1.20	1340

LEGEND

Bhp — Brake Horsepower Input to Fan
ESP — External Static Pressure (in wg)
Watts — Input Watts to Motor

NOTES:

1. Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information

2. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

3. Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative to verify.

50TJ006 (5 TONS) — ALTERNATE MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.1			0.2			0.4			0.6			0.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1500	730	0.34	347	789	0.40	409	896	0.53	542	990	0.67	685	1072	0.83	848
1600	770	0.40	409	826	0.46	470	931	0.61	623	1020	0.75	766	1101	0.91	930
1700	811	0.47	480	865	0.54	552	966	0.69	705	1051	0.84	858	1133	1.01	1032
1800	852	0.55	562	905	0.62	634	1002	0.78	797	1084	0.93	950	1163	1.10	1124
1900	894	0.54	552	945	0.72	736	1037	0.88	899	1119	1.04	1063	1194	1.21	1237
2000	936	0.74	756	984	0.82	838	1072	0.98	1001	1154	1.16	1185	1226	1.33	1359
2100	978	0.85	869	1024	0.93	950	1108	1.10	1124	1192	1.29	1318	1259	1.47	1502
2200	1021	0.97	991	1064	1.05	1073	1145	1.22	1247	1225	1.43	1461	1294	1.62	1656
2300	1064	1.10	1124	1104	1.18	1206	1183	1.36	1390	1260	1.57	1604	1330	1.78	1819
2400	1107	1.24	1267	1145	1.32	1349	1222	1.45	1482	1296	1.73	1768	1365	1.94	1983
2500	1150	1.39	1420	1186	1.48	1512	1262	1.68	1717	1331	1.80	1921	1400	2.12	2166

50TJ006 (5 TONS) — ALTERNATE MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.0			1.2			1.4			1.6			1.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1500	1153	1.00	1022	1221	1.17	1196	1256	1.30	1328	1280	1.32	1349	1320	1.22	1400
1600	1178	1.09	1114	1252	1.27	1298	1311	1.45	1482	1340	1.58	1615	1380	1.61	1645
1700	1205	1.18	1206	1278	1.37	1400	1345	1.57	1604	1397	1.76	1799	1424	1.89	1931
1800	1235	1.29	1318	1303	1.48	1512	1371	1.69	1727	1433	1.90	1942	1480	2.09	2136
1900	1266	1.40	1431	1330	1.59	1625	1396	1.80	1850	1460	2.03	2074	1517	2.25	2299
2000	1297	1.53	1564	1362	1.73	1768	1422	1.94	1983	1485	2.16	2207	1544	2.40	2453
2100	1327	1.66	1696	1393	1.80	1911	1452	2.08	2126	1510	2.31	2361	1569	2.55	2606
2200	1359	1.80	1850	1423	2.02	2064	1483	2.24	2289	1538	2.46	2514	1595	2.71	2769
2300	1392	1.97	2013	1454	2.18	2228	1515	2.41	2463	1569	2.64	2698	1622	2.88	2943
2400	1426	2.15	2197	1485	2.36	2412	1544	2.59	2647	1601	2.84	2902	1652	3.07	3137
2500	1461	2.34	2391	1518	2.55	2606	1575	2.78	2841	1631	3.03	3096	1684	3.28	3352

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

1. **Boldface** indicates a field-supplied drive is required. (See Note 6.)
2. **Shading** indicates field-supplied motor and drive are required.
3. Maximum usable watts input is 1921 and maximum continuous bhp is 1.80. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

4. Values include losses for filters, unit casings, and wet coils. See page 43 for accessory/FIOP static pressure information.
5. Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
6. Alternate motor drive range: 900 to 1300 rpm. All other rpms require field-supplied drive.
7. Interpolation is permissible. Do not extrapolate.

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

50TJ007 (6 TONS) — STANDARD MOTOR (BELT DRIVE)															
Airflow (Cfm)	External Static Pressure (in. wg)														
	0.1			0.2			0.4			0.6			0.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	852	0.55	562	905	0.62	615	1002	0.78	739	1084	0.93	859	1163	1.10	998
1900	894	0.64	630	945	0.72	692	1037	0.88	818	1119	1.04	948	1194	1.21	1089
2000	936	0.74	708	984	0.82	771	1072	0.98	899	1154	1.16	1047	1226	1.33	1190
2100	978	0.85	795	1024	0.93	859	1108	1.10	998	1190	1.29	1156	1259	1.47	1310
2200	1021	0.97	891	1064	1.05	956	1145	1.22	1097	1225	1.43	1275	1294	1.62	1439
2300	1064	1.10	998	1104	1.18	1064	1183	1.36	1216	1260	1.57	1396	1330	1.78	1578
2400	1107	1.24	1114	1145	1.32	1182	1222	1.52	1353	1296	1.73	1534	1365	1.94	1718
2500	1150	1.39	1241	1186	1.48	1318	1262	1.68	1491	1331	1.89	1674	1400	2.12	1875
2600	1193	1.56	1387	1228	1.65	1465	1301	1.86	1648	1367	2.07	1831	1435	2.31	2041
2700	1237	1.74	1543	1269	1.83	1621	1341	2.05	1814	1404	2.26	1997	1471	2.51	2214
2800	1280	1.94	1718	1311	2.03	1796	1381	2.25	1989	1442	2.47	2180	1506	2.72	2394
2900	1324	2.15	1901	1354	2.24	1980	1420	2.47	2180	1481	2.69	2369	1542	2.94	2579
3000	1368	2.37	2093	1396	2.46	2171	1460	2.69	2369	1521	2.93	2571	—	—	—

50TJ007 (6 TONS) — STANDARD MOTOR (BELT DRIVE)												
Airflow (Cfm)	External Static Pressure (in. wg)											
	1.0			1.2			1.4			1.6		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	1235	1.29	1156	1303	1.48	1318	1371	1.69	1499	1433	1.90	1638
1900	1266	1.40	1250	1330	1.59	1413	1396	1.81	1604	1460	2.03	1796
2000	1297	1.53	1361	1362	1.73	1534	1422	1.94	1718	1485	2.16	1910
2100	1327	1.66	1473	1393	1.87	1656	1452	2.08	1840	1510	2.31	2041
2200	1359	1.81	1604	1423	2.02	1779	1483	2.24	1980	1538	2.46	2171
2300	1392	1.97	1744	1454	2.18	1927	1515	2.41	2128	1569	2.64	2326
2400	1426	2.15	1901	1485	2.36	2084	1544	2.59	2283	1601	2.84	2459
2500	1461	2.34	2067	1518	2.55	2249	1575	2.78	2445	—	—	—
2600	1497	2.54	2240	1552	2.76	2426	—	—	—	—	—	—
2700	1532	2.75	2420	—	—	—	—	—	—	—	—	—
2800	—	—	—	—	—	—	—	—	—	—	—	—
2900	—	—	—	—	—	—	—	—	—	—	—	—
3000	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

1. **Boldface** indicates a field-supplied drive is required (See Note 6.)
2. **Shading** indicates field-supplied motor and drive are required.
3. Maximum usable watts input is 2120 and maximum continuous bhp is 2.40. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

4. Values include losses for filters, unit casings, and wet coils. See page 43 for accessory/FIOP static pressure information.
5. Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
6. Standard motor drive range: 1070 to 1460 rpm. All other rpms require field-supplied drive.
7. Interpolation is permissible. Do not extrapolate.

Performance data (cont)



FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

50TJ008 (7½ TONS) — STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.2			0.4			0.6			0.8			1.0			1.2		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	511	0.52	539	592	0.74	708	659	0.95	875	722	1.19	1072	778	1.43	1275	829	1.68	1491
2300	518	0.55	562	599	0.77	731	665	0.98	899	727	1.22	1097	783	1.47	1310	834	1.72	1526
2400	534	0.61	607	613	0.84	787	677	1.06	965	738	1.30	1165	794	1.55	1378	844	1.81	1604
2500	549	0.67	653	627	0.90	835	690	1.14	1031	750	1.38	1233	805	1.64	1456	855	1.91	1691
2550	557	0.71	684	633	0.94	867	697	1.18	1064	756	1.42	1267	811	1.69	1499	861	1.96	1735
2600	565	0.74	708	639	0.97	891	703	1.22	1097	761	1.46	1301	816	1.74	1543	866	2.01	1779
2700	581	0.81	763	652	1.04	948	717	1.31	1173	773	1.55	1378	827	1.83	1621	878	2.12	1875
2800	597	0.89	827	665	1.12	1014	733	1.40	1250	786	1.66	1473	839	1.93	1709	889	2.23	1971
2900	613	0.97	891	679	1.20	1081	745	1.50	1335	799	1.76	1560	850	2.04	1805	900	2.34	2067
3000	629	1.06	965	694	1.29	1156	759	1.59	1413	812	1.88	1665	862	2.15	1901	911	2.45	2171
3100	646	1.15	1039	709	1.39	1241	772	1.70	1508	825	1.99	1761	875	2.28	2015	923	2.58	2275
3200	662	1.25	1123	724	1.50	1335	785	1.80	1595	840	2.11	1866	887	2.41	2128	934	2.71	2366
3300	679	1.35	1207	740	1.61	1430	798	1.91	1691	854	2.24	1980	900	2.54	2240	946	2.85	2504
3400	696	1.46	1301	756	1.73	1534	811	2.02	1788	868	2.37	2093	914	2.69	2369	959	3.00	2629
3500	712	1.57	1396	771	1.85	1639	824	2.14	1892	881	2.50	2206	928	2.84	2495	971	3.16	2759
3600	729	1.69	1499	787	1.98	1753	839	2.21	2006	894	2.64	2326	942	2.99	2620	984	3.22	2886
3700	746	1.85	1613	803	2.12	1875	854	2.42	2136	907	2.78	2445	956	3.15	2751	997	3.49	3017
3750	755	1.89	1674	811	2.20	1945	862	2.49	2197	914	2.85	2504	963	3.23	2815	—	—	—

50TJ008 (7½ TONS) — STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)											
	1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	884	1.97	1744	937	2.33	2058	947	2.66	2343	1022	3.10	2710
2300	885	2.00	1770	939	2.36	2084	979	2.69	2369	1025	3.12	2727
2400	892	2.08	1840	944	2.40	2119	987	2.75	2428	1039	3.20	2791
2500	902	2.18	1927	949	2.48	2188	1002	2.84	2495	1041	3.25	2831
2550	908	2.24	1980	953	2.53	2232	1003	2.87	2521	1045	3.28	2854
2600	913	2.29	2023	957	2.58	2275	1004	2.91	2554	1050	3.31	2878
2700	924	2.40	2120	967	2.70	2377	1010	3.01	2637	1056	3.37	2925
2800	935	2.52	2223	978	2.82	2479	1019	3.13	2735	1061	3.47	3002
2900	946	2.65	2335	989	2.96	2595	1030	3.27	2847	—	—	—
3000	957	2.78	2445	1000	3.09	2702	1040	3.41	2956	—	—	—
3100	968	2.91	2554	1011	3.24	2832	—	—	—	—	—	—
3200	980	3.04	2661	1022	3.38	2933	—	—	—	—	—	—
3300	991	3.18	2775	—	—	—	—	—	—	—	—	—
3400	1003	3.32	2886	—	—	—	—	—	—	—	—	—
3500	1014	3.48	3009	—	—	—	—	—	—	—	—	—
3600	—	—	—	—	—	—	—	—	—	—	—	—
3700	—	—	—	—	—	—	—	—	—	—	—	—
3750	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied drive is required. (See Note 7.)
- Shading** indicates alternate drive is required.
- Shading** indicates field-supplied motor and drive are required.
- Maximum usable watts input is 2120 and maximum continuous bhp is 2.40. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance refer to Evaporator-Fan Motor Performance table on page 45.

- Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Standard motor drive range: 590 to 840 rpm. Alternate motor drive range: 685 to 935 rpm. All other rpms require field-supplied drive
- Interpolation is permissible. Do not extrapolate

FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

50TJ009 (8½ TONS) — STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.2			0.4			0.6			0.8			1.0			1.2		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2550	557	0.71	684	633	0.94	867	697	1.18	1064	756	1.42	1267	811	1.69	1499	861	1.96	1735
2600	565	0.74	708	639	0.97	891	703	1.22	1097	761	1.46	1301	816	1.74	1543	866	2.01	1779
2700	581	0.81	763	652	1.04	948	717	1.31	1173	773	1.55	1378	827	1.83	1621	878	2.12	1875
2800	597	0.89	827	665	1.12	1014	733	1.40	1250	786	1.66	1473	839	1.93	1709	889	2.23	1971
2900	613	0.97	891	679	1.20	1081	745	1.50	1335	799	1.76	1560	850	2.04	1805	900	2.34	2067
3000	629	1.06	965	694	1.29	1156	759	1.59	1413	812	1.88	1665	862	2.15	1901	911	2.46	2171
3100	646	1.15	1039	709	1.39	1241	772	1.70	1508	825	1.99	1761	875	2.28	2015	923	2.58	2275
3200	662	1.25	1123	724	1.50	1335	785	1.80	1595	840	2.11	1866	887	2.41	2128	934	2.71	2386
3300	679	1.35	1207	740	1.61	1430	798	1.91	1691	854	2.24	1980	900	2.54	2240	946	2.85	2504
3400	696	1.46	1301	756	1.73	1534	811	2.02	1788	868	2.37	2093	914	2.69	2369	959	3.00	2629
3500	712	1.57	1396	771	1.85	1639	824	2.14	1892	881	2.50	2206	928	2.84	2495	971	3.16	2759
3600	729	1.69	1499	787	1.98	1753	839	2.27	2006	894	2.64	2326	942	2.99	2620	984	3.32	2886
3700	746	1.82	1613	803	2.12	1875	854	2.42	2136	907	2.78	2445	956	3.15	2751	997	3.49	3017
3750	755	1.89	1674	811	2.20	1945	862	2.49	2197	914	2.85	2504	963	3.23	2815	—	—	—
3800	763	1.95	1726	819	2.27	2006	869	2.56	2257	920	2.92	2562	970	3.31	2878	—	—	—
3900	780	2.09	1849	835	2.42	2136	884	2.72	2394	933	3.07	2686	983	3.48	3009	—	—	—
4000	796	2.23	1971	851	2.56	2257	900	2.89	2537	946	3.23	2815	—	—	—	—	—	—
4100	813	2.39	2110	867	2.74	2411	915	3.06	2678	960	3.40	2948	—	—	—	—	—	—
4200	830	2.55	2249	883	2.91	2554	931	3.24	2823	—	—	—	—	—	—	—	—	—
4250	839	2.63	2317	892	3.00	2629	939	3.34	2902	—	—	—	—	—	—	—	—	—

50TJ009 (8½ TONS) — STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)											
	1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2550	908	2.24	1980	953	2.53	2232	1003	2.87	2521	1045	3.28	2854
2600	913	2.29	2023	957	2.58	2275	1004	2.91	2554	1050	3.31	2878
2700	924	2.40	2120	967	2.70	2377	1010	3.01	2637	1056	3.37	2925
2800	935	2.52	2223	978	2.82	2479	1019	3.13	2735	1061	3.41	3002
2900	946	2.65	2335	989	2.96	2595	1030	3.27	2847	—	—	—
3000	957	2.78	2445	1000	3.09	2702	1040	3.41	2956	—	—	—
3100	968	2.91	2554	1011	3.24	2832	—	—	—	—	—	—
3200	980	3.04	2661	1022	3.38	2933	—	—	—	—	—	—
3300	991	3.18	2775	—	—	—	—	—	—	—	—	—
3400	1003	3.32	2886	—	—	—	—	—	—	—	—	—
3500	1014	3.48	3009	—	—	—	—	—	—	—	—	—
3600	—	—	—	—	—	—	—	—	—	—	—	—
3700	—	—	—	—	—	—	—	—	—	—	—	—
3750	—	—	—	—	—	—	—	—	—	—	—	—
3800	—	—	—	—	—	—	—	—	—	—	—	—
3900	—	—	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—	—	—
4100	—	—	—	—	—	—	—	—	—	—	—	—
4200	—	—	—	—	—	—	—	—	—	—	—	—
4250	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES

- 1 Boldface** indicates a field-supplied drive is required. (See Note 6)
- 2 Shading** indicates field-supplied motor and drive are required
- Maximum usable watts input is 2120 and maximum continuous bhp is 2.40. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance refer to Evaporator-Fan Motor Performance table on page 45.

- Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Standard motor drive range: 685 to 935 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate.

Performance data (cont)



FAN PERFORMANCE — VERTICAL DISCHARGE UNITS (cont)

50TJ012 (10 TONS) — STANDARD AND ALTERNATE MOTORS (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)											
	0.2			0.4			0.6			0.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	532	0.64	630	605	0.81	763	670	0.97	891	725	1.12	1014
3100	544	0.70	677	616	0.86	803	680	1.03	940	735	1.20	1081
3200	557	0.75	716	628	0.93	859	690	1.10	998	746	1.28	1148
3300	570	0.81	763	639	0.99	907	700	1.18	1064	757	1.36	1216
3400	583	0.88	818	651	1.06	965	711	1.25	1123	767	1.44	1284
3500	596	0.94	867	663	1.14	1031	721	1.33	1190	777	1.52	1353
3600	609	1.01	924	674	1.22	1097	732	1.42	1267	787	1.61	1430
3700	622	1.09	989	686	1.30	1165	744	1.50	1335	797	1.70	1508
3800	635	1.16	1047	698	1.39	1241	755	1.59	1413	808	1.80	1595
3900	649	1.25	1123	713	1.48	1318	767	1.68	1491	818	1.90	1683
4000	662	1.33	1190	722	1.57	1396	778	1.78	1578	829	2.01	1779
4100	675	1.42	1267	734	1.67	1482	790	1.89	1674	839	2.12	1875
4200	689	1.52	1353	746	1.77	1569	801	1.99	1761	851	2.23	1971
4300	702	1.61	1430	759	1.88	1665	813	2.11	1866	862	2.34	2067
4400	715	1.72	1526	772	1.99	1761	825	2.22	1962	873	2.46	2221
4500	729	1.83	1621	785	2.10	1858	837	2.35	2076	885	2.59	2335
4600	742	1.94	1718	797	2.22	1962	848	2.48	2238	896	2.72	2451
4700	756	2.06	1823	810	2.34	2067	860	2.61	2353	908	2.86	2578
4800	770	2.18	1927	823	2.46	2221	872	2.75	2505	919	3.00	2707
4900	783	2.31	2041	836	2.60	2344	884	2.89	2605	931	3.14	2838
5000	797	2.44	2203	849	2.73	2460	897	3.04	2661	943	3.30	2870

50TJ012 (10 TONS) — STANDARD AND ALTERNATE MOTORS (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)											
	1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	874	1.60	1422	926	1.82	1613	974	2.11	1920	1012	2.41	2134
3100	880	1.68	1491	933	1.87	1656	983	2.16	1963	1017	2.44	2177
3200	888	1.77	1569	934	1.94	1718	988	2.18	1980	1025	2.47	2230
3300	897	1.86	1648	940	2.03	1853	989	2.24	2031	1032	2.53	2282
3400	907	1.97	1744	947	2.14	1946	991	2.32	2099	1038	2.57	2318
3500	916	2.07	1831	956	2.25	2039	997	2.43	2195	1043	2.64	2380
3600	926	2.18	1927	966	2.41	2134	1004	2.54	2291	1045	2.74	2478
3700	934	2.28	2015	976	2.48	2238	1013	2.66	2397	1051	2.85	2569
3800	943	2.41	2160	985	2.60	2334	1023	2.79	2514	1053	2.98	2686
3900	952	2.51	2265	994	2.72	2451	1032	2.92	2633	1068	3.12	2819
4000	962	2.63	2371	1003	2.84	2560	1042	3.06	2763	1078	3.26	2952
4100	973	2.77	2496	1011	2.97	2679	1051	3.20	2895	1087	3.41	3087
4200	983	2.91	2624	1021	3.11	2810	1060	3.34	3029	1090	3.51	3226
4300	994	3.05	2754	1031	3.25	2943	1068	3.48	3166	1097	3.70	3453
4400	1004	3.19	2885	1042	3.41	3097	1080	3.63	3388	1105	3.91	3642
4500	1015	3.33	3020	1051	3.45	3218	1090	3.75	3493	1112	4.12	3843
4600	1025	3.48	3166	1060	3.61	3369	1100	3.92	3655	1119	4.35	4057
4700	1037	3.58	3335	1070	3.84	3525	1111	4.10	3822	1126	4.58	4284
4800	1048	3.75	3494	1080	3.95	3686	1121	4.28	3995	1133	4.85	4523
4900	1060	3.92	3659	1089	4.13	3854	1132	4.48	4174	1140	5.12	4775
5000	1072	4.11	3830	1098	4.32	4027	1144	4.67	4359	1147	5.40	5040

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- 1. Boldface** indicates a field-supplied or alternate (as appropriate) drive is required (See Note 7.)
- Shading** indicates alternate motor and drive are required.
- Shading** indicates field-supplied motor and drive are required.
- Maximum usable watts input is 2120 with standard motor and 2615 with alternate motor. Maximum continuous bhp is 2.40 with standard motor and 2.90 with alternate motor. Extensive motor and electrical

testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

- Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Standard motor drive range: 685 to 935 rpm. Alternate motor drive range: 835 to 1085 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate.

FAN PERFORMANCE – VERTICAL DISCHARGE UNITS

50TJ014 (12½ TONS) – STANDARD AND ALTERNATE MOTORS (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.2			0.4			0.6			0.8			1.0			1.2		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	654	1.12	1065	714	1.31	1218	767	1.50	1373	815	1.67	1514	861	1.85	1666	906	2.08	1862
3800	668	1.20	1129	727	1.40	1291	780	1.60	1456	827	1.77	1598	873	1.95	1751	916	2.18	1948
3900	683	1.28	1194	741	1.49	1365	793	1.70	1540	839	1.88	1691	884	2.05	1836	927	2.28	2035
4000	697	1.37	1267	754	1.59	1448	806	1.80	1624	851	1.99	1785	895	2.16	1931	938	2.38	2123
4100	711	1.46	1340	767	1.69	1531	819	1.90	1708	864	2.10	1879	907	2.28	2035	949	2.49	2219
4200	726	1.56	1423	780	1.80	1624	832	2.01	1802	877	2.22	1983	919	2.41	2149	960	2.60	2316
4300	741	1.66	1506	794	1.91	1717	845	2.12	1897	889	2.35	2096	931	2.54	2263	971	2.72	2433
4400	755	1.77	1598	808	2.03	1819	858	2.24	2000	902	2.48	2210	943	2.68	2387	983	2.86	2548
4500	770	1.89	1700	821	2.15	1923	871	2.37	2114	915	2.61	2325	955	2.82	2512	995	3.01	2683
4600	784	2.00	1794	835	2.27	2027	884	2.49	2219	928	2.75	2450	968	2.96	2638	1006	3.17	2828
4700	799	2.13	1905	849	2.40	2140	897	2.63	2343	941	2.88	2566	981	3.11	2773	1018	3.32	2964
4800	814	2.25	2009	863	2.53	2254	910	2.77	2468	954	3.02	2692	993	3.27	2919	1030	3.48	3111
4900	829	2.39	2131	877	2.67	2378	923	2.92	2602	967	3.17	2828	1006	3.43	3065	1043	3.65	3267
5000	843	2.52	2246	892	2.81	2503	937	3.08	2746	980	3.32	2964	1019	3.60	3221	1055	3.82	3424
5100	858	2.67	2378	906	2.95	2629	950	3.24	2891	993	3.48	3111	1032	3.76	3368	1068	4.00	3590
5200	873	2.82	2512	920	3.10	2764	963	3.40	3037	1006	3.65	3267	1045	3.93	3525	1081	4.19	3767
5300	888	2.97	2647	934	3.26	2910	977	3.57	3193	1019	3.82	3424	1058	4.11	3692	1094	4.38	3943
5400	903	3.13	2792	949	3.43	3065	991	3.75	3359	1032	4.00	3590	1071	4.29	3860	1106	4.57	4120
5500	918	3.30	2946	963	3.59	3212	1004	3.92	3516	1045	4.18	3757	1084	4.47	4027	1119	4.77	4307
5600	933	3.47	3101	978	3.77	3377	1018	4.11	3692	1058	4.38	3943	1097	4.66	4204	1132	4.97	4493
5700	948	3.65	3267	992	3.95	3544	1032	4.30	3869	1072	4.58	4130	1110	4.86	4391	1145	5.18	4689
5800	963	3.83	3433	1006	4.14	3720	1046	4.50	4055	1085	4.79	4326	1123	5.07	4595	1158	5.39	4884
5900	978	4.00	3590	1021	4.34	3906	1060	4.69	4232	1098	5.01	4531	1136	5.28	4782	1171	5.60	5078
6000	993	4.22	3795	1035	4.54	4093	1074	4.91	4419	1112	5.23	4735	1149	5.50	4986	—	—	—
6100	1008	4.42	3981	1050	4.75	4288	1089	5.10	4616	1125	5.45	4939	1162	5.73	5198	—	—	—
6200	1023	4.63	4176	1065	4.96	4484	1103	5.32	4819	1139	5.66	5152	—	—	—	—	—	—
6300	1038	4.85	4382	1079	5.19	4698	1079	5.54	5023	—	—	—	—	—	—	—	—	—

50TJ014 (12½ TONS) – STANDARD AND ALTERNATE MOTORS (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)											
	1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	950	2.27	2027	991	2.47	2202	1030	2.65	2361	1064	2.82	2512
3800	959	2.38	2123	1001	2.58	2299	1040	2.78	2476	1075	2.96	2638
3900	969	2.50	2228	1010	2.70	2405	1049	2.91	2593	1085	3.11	2773
4000	979	2.62	2334	1020	2.83	2521	1059	3.04	2710	1095	3.25	2901
4100	989	2.74	2441	1029	2.96	2638	1068	3.18	2837	1105	3.39	3028
4200	1000	2.86	2548	1039	3.10	2764	1077	3.31	2955	1114	3.54	3166
4300	1011	2.97	2647	1049	3.23	2882	1087	3.46	3092	1124	3.69	3304
4400	1022	3.10	2764	1059	3.37	3010	1097	3.61	3230	1133	3.84	3442
4500	1033	3.23	2882	1070	3.51	3138	1107	3.76	3368	1143	4.00	3590
4600	1044	3.37	3010	1081	3.64	3258	1117	3.92	3516	1152	4.17	3748
4700	1056	3.52	3147	1092	3.78	3387	1127	4.07	3655	1162	4.33	3897
4800	1057	3.69	3304	1103	3.93	3525	1138	4.23	3804	1172	4.50	4055
4900	1079	3.87	3470	1114	4.09	3674	1149	4.37	3934	1182	4.68	4223
5000	1091	4.05	3637	1126	4.25	3822	1160	4.53	4083	1193	4.85	4382
5100	1103	4.23	3804	1137	4.45	4009	1171	4.70	4242	1204	5.01	4531
5200	1115	4.42	3981	1149	4.65	4195	1182	4.91	4409	1215	5.18	4689
5300	1127	4.62	4167	1161	4.85	4382	1194	5.07	4586	1226	5.36	4856
5400	1139	4.82	4354	1173	5.06	4577	1205	5.29	4791	1237	5.55	5032
5500	1152	5.03	4549	1185	5.27	4772	1217	5.51	4995	1248	5.75	5216
5600	1165	5.24	4746	1197	5.49	4976	1229	5.74	5207	—	—	—
5700	1178	5.46	4949	1209	5.72	5189	—	—	—	—	—	—
5800	—	—	—	—	—	—	—	—	—	—	—	—
5900	—	—	—	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—	—	—
6100	—	—	—	—	—	—	—	—	—	—	—	—
6200	—	—	—	—	—	—	—	—	—	—	—	—
6300	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied or alternate (as appropriate) drive is required (See Note 7)
- Shading** indicates alternate motor and drive are required
- Shading** indicates field-supplied motor and drive are required
- Maximum usable watts input is 3775 with standard motor and 4400 with alternate motor. Maximum continuous bhp is 4.20 with standard motor and 4.90 with alternate motor. Extensive motor and electrical

testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

- Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Standard motor drive range: 860 to 1080 rpm. Alternate motor drive range: 900 to 1260 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate.

Performance data (cont)



NOTE: FAN PERFORMANCE DATA TABLES FOR 50TJ016-028 UNITS ARE ON PAGES 38-42.

FAN PERFORMANCE – HORIZONTAL DISCHARGE UNITS

50TJ004 (3 TONS) – STANDARD MOTOR (DIRECT DRIVE)												
Airflow (Cfm)	Low Speed						High Speed					
	208 v			230, 460, 575 v			208 v			230, 460, 575 v		
	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts
900	0.72	0.21	253	0.75	0.23	277	0.73	0.26	307	0.76	0.31	363
1000	0.67	0.23	270	0.69	0.25	292	0.70	0.27	321	0.71	0.32	374
1100	0.61	0.24	287	0.63	0.26	307	0.64	0.28	335	0.65	0.33	385
1200	0.57	0.26	304	0.58	0.27	323	0.56	0.29	349	0.59	0.34	397
1300	0.51	0.27	321	0.53	0.29	338	0.53	0.31	364	0.54	0.34	408
1400	0.44	0.29	338	0.46	0.30	354	0.47	0.32	378	0.48	0.35	420
1500	0.39	0.30	355	0.41	0.31	369	0.43	0.33	392	0.43	0.36	431

LEGEND

Bhp — Brake Horsepower Input to Fan
ESP — External Static Pressure (in. wg)
Watts — Input Watts to Motor

NOTES:

1. Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.

- Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.
- Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative to verify.

50TJ004 (3 TONS) – ALTERNATE MOTOR (BELT DRIVE)																		
Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.1			0.2			0.3			0.4			0.5			0.6		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
900	526	0.06	70	584	0.08	99	656	0.12	139	734	0.22	219	818	0.25	269	875	0.27	289
1000	570	0.09	109	627	0.13	149	738	0.19	189	800	0.26	259	848	0.29	288	895	0.31	308
1100	614	0.13	149	670	0.16	189	758	0.23	229	812	0.29	288	863	0.32	308	914	0.35	348
1200	658	0.16	189	710	0.23	229	780	0.28	279	840	0.32	318	889	0.36	358	938	0.40	398
1300	703	0.20	239	752	0.27	269	808	0.32	318	868	0.37	368	916	0.41	408	963	0.45	448
1400	725	0.29	288	776	0.31	308	845	0.38	378	891	0.42	418	937	0.47	467	983	0.51	507
1500	755	0.33	328	816	0.38	378	870	0.43	428	924	0.48	477	969	0.53	527	1014	0.58	577

50TJ004 (3 TONS) – ALTERNATE MOTOR (BELT DRIVE)																		
Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.7			0.8			0.9			1.0			1.1			1.2		
	Rpm	Bhp	Watt	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
900	924	0.32	308	953	0.35	348	989	0.38	388	1028	0.42	438	1074	0.49	487	1120	0.54	537
1000	936	0.35	348	977	0.39	388	1020	0.44	438	1064	0.48	477	1124	0.54	537	1185	0.60	597
1100	960	0.39	388	1005	0.43	428	1052	0.49	487	1100	0.52	527	1163	0.59	587	1225	0.65	647
1200	960	0.45	388	1038	0.50	497	1076	0.53	527	1136	0.59	577	1201	0.65	647	1266	0.72	716
1300	1012	0.51	507	1061	0.56	557	1090	0.61	607	1172	0.65	647	1239	0.72	716	1306	0.79	786
1400	1027	0.56	557	1071	0.60	597	1108	0.67	666	1208	0.70	706	1278	0.79	786	1347	0.87	865
1500	1056	0.63	627	1097	0.68	676	1117	0.70	696	1245	0.74	776	1315	0.87	865	1385	0.96	955

LEGEND

Bhp — Brake Horsepower Input to Fan
ESP — External Static Pressure (in. wg)
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied drive is required. (See Note 4.)
- Maximum usable watts input is 1000 and maximum continuous bhp is 1.00. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

- your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.
- Values include losses for filters, unit casings, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Alternate motor drive range: 760 to 1000 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate.
- Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative to verify.

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

50TJ005 (4 TONS) — STANDARD MOTOR (DIRECT DRIVE)												
Airflow (Cfm)	Low Speed						High Speed					
	208 v			230, 460, 575 v			208 v			230, 460, 575 v		
	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts
1200	0.93	0.41	458	0.97	0.45	506	1.04	0.51	572	1.09	0.56	632
1300	0.86	0.42	471	0.90	0.46	521	0.96	0.52	589	1.02	0.58	651
1400	0.78	0.45	503	0.84	0.49	556	0.90	0.54	616	0.96	0.60	681
1500	0.73	0.47	536	0.76	0.52	593	0.83	0.56	631	0.89	0.62	698
1600	0.67	0.49	557	0.70	0.54	616	0.75	0.58	654	0.82	0.64	723
1700	0.60	0.52	584	0.63	0.57	646	0.67	0.60	678	0.74	0.66	750
1800	0.51	0.54	610	0.54	0.60	674	0.62	0.62	698	0.69	0.68	772
1900	0.40	0.56	629	0.45	0.62	696	0.54	0.64	720	0.62	0.70	796
2000	0.32	0.58	661	0.33	0.65	731	0.47	0.66	744	0.54	0.73	823

LEGEND

Bhp — Brake Horsepower Input to Fan
ESP — External Static Pressure (in. wg)
Watts — Input Watts to Motor

NOTES:

1. Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information

- Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45
- Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative to verify.

50TJ005 (4 TONS) — ALTERNATE MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (In. wg)																				
	0.1			0.2			0.3			0.4			0.6			0.7			0.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1200	514	0.15	158	590	0.20	210	657	0.25	263	723	0.30	315	828	0.42	441	876	0.49	510	924	0.55	578
1300	545	0.18	189	615	0.23	242	680	0.29	305	744	0.35	368	849	0.47	494	895	0.54	562	940	0.60	630
1400	577	0.21	221	642	0.27	284	704	0.33	347	766	0.39	410	870	0.52	546	915	0.59	620	959	0.66	693
1500	609	0.26	273	670	0.31	326	729	0.38	394	788	0.44	462	892	0.58	609	936	0.65	683	980	0.72	757
1600	642	0.30	315	699	0.36	378	755	0.43	447	811	0.49	515	913	0.64	672	957	0.72	751	1001	0.79	830
1700	675	0.36	378	728	0.42	441	782	0.49	510	836	0.55	578	935	0.71	746	979	0.79	825	1023	0.86	904
1800	709	0.41	431	759	0.48	504	810	0.55	578	860	0.62	651	957	0.78	820	1001	0.86	904	1044	0.94	988
1900	743	0.48	504	790	0.55	578	838	0.62	651	886	0.69	725	980	0.86	904	1023	0.95	993	1066	1.03	1082
2000	778	0.55	578	836	0.62	651	875	0.70	730	913	0.77	809	1004	0.94	988	1046	1.03	1082	1088	1.12	1177

50TJ005 (4 TONS) — ALTERNATE MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)																	
	1.0			1.1			1.2			1.4			1.6			1.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1200	999	0.66	674	1018	0.67	685	1036	0.68	695	1073	0.71	756	1109	0.75	794	1138	0.79	851
1300	1025	0.74	756	1058	0.79	807	1090	0.84	858	1121	0.87	832	1159	0.90	918	1193	0.95	976
1400	1042	0.81	828	1080	0.88	899	1118	0.95	971	1175	1.06	1014	1206	1.09	1042	1244	1.12	1138
1500	1060	0.88	899	1098	0.96	981	1136	1.04	1063	1205	1.19	1138	1258	1.30	1243	1289	1.34	1282
1600	1080	0.95	971	1117	1.04	1058	1153	1.12	1140	1224	1.29	1234	1287	1.45	1387	1337	1.56	1492
1700	1101	1.03	1053	1137	1.12	1139	1172	1.20	1226	1241	1.38	1320	1307	1.56	1492	1366	1.73	1655
1800	1122	1.11	1134	1157	1.20	1226	1192	1.29	1318	1258	1.48	1415	1323	1.67	1597	1385	1.86	1779
1900	1143	1.21	1237	1179	1.30	1328	1214	1.39	1420	1279	1.58	1511	1341	1.78	1702	1402	1.98	1894
2000	1165	1.31	1339	1200	1.40	1431	1235	1.49	1523	1300	1.69	1616	1361	1.90	1817	1419	2.10	2008

LEGEND

Bhp — Brake Horsepower Input to Fan
ESP — External Static Pressure (in. wg)
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied drive is required. (See Note 6.)
- Shading** indicates field-supplied motor and drive are required.
- Maximum usable watts input is 1000 and maximum continuous bhp is 1.00. Extensive motor and electrical testing on these units ensures

that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45

- Values include losses for filters, unit casings, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Alternate motor drive range: 835 to 1185 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate

Performance data (cont)



FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

50TJ006 (5 TONS) — STANDARD MOTOR (DIRECT DRIVE)																		
AIRFLOW (Cfm)	Low Speed						Medium Speed						High Speed					
	208 v			230, 460, 575 v			208 v			230, 460, 575 v			208 v			230, 460, 575 v		
	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts	ESP	Bhp	Watts
1500	1.01	0.67	750	1.25	0.71	791	1.26	0.70	782	1.46	0.76	845	1.46	0.79	875	1.52	0.85	949
1600	0.82	0.70	780	1.09	0.74	824	1.11	0.74	821	1.32	0.79	883	1.33	0.82	913	1.41	0.89	988
1700	0.64	0.73	810	0.97	0.77	857	0.99	0.77	861	1.22	0.83	921	1.24	0.85	950	1.33	0.92	1027
1800	0.44	0.75	839	0.81	0.80	891	0.84	0.80	900	1.09	0.86	959	1.11	0.89	988	1.22	0.96	1066
1900	0.32	0.78	869	0.66	0.83	924	0.69	0.83	940	0.96	0.90	997	0.99	0.92	1025	1.11	0.99	1105
2000	0.21	0.81	899	0.47	0.86	957	0.51	0.86	979	0.80	0.93	1035	0.83	0.95	1063	0.97	1.03	1144
2100	0.13	0.83	929	0.32	0.89	990	0.36	0.89	1018	0.64	0.96	1073	0.71	0.99	1101	0.86	1.06	1183
2200	0.05	0.86	959	0.19	0.92	1023	0.21	0.92	1058	0.50	1.00	1111	0.58	1.02	1138	0.75	1.10	1222
2300	—	—	—	0.08	0.95	1057	0.08	0.95	1097	0.34	1.03	1149	0.39	1.06	1176	0.57	1.13	1261
2400	—	—	—	—	—	—	—	—	—	0.24	1.07	1187	0.29	1.09	1213	0.49	1.17	1300
2500	—	—	—	—	—	—	—	—	—	0.15	1.10	1225	0.15	1.12	1251	0.34	1.20	1340

LEGEND

Bhp — Brake Horsepower Input to Fan
ESP — External Static Pressure (in wg)
Watts — Input Watts to Motor

NOTES:

1. Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information

- Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.
- Use of a field-supplied motor may affect wire sizing. Contact your Carrier representative to verify.

50TJ006 (5 TONS) — ALTERNATE MOTOR (BELT DRIVE)															
Airflow (Cfm)	External Static Pressure (in. wg)														
	0.1			0.2			0.4			0.6			0.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1500	658	0.27	276	722	0.33	337	840	0.46	470	937	0.59	603	1027	0.74	756
1600	693	0.32	327	754	0.38	388	867	0.52	531	963	0.65	664	1052	0.81	828
1700	729	0.38	388	787	0.44	450	895	0.58	593	991	0.73	746	1075	0.88	899
1800	765	0.45	460	821	0.51	521	923	0.65	664	1019	0.81	828	1099	0.96	981
1900	802	0.52	531	854	0.58	593	953	0.73	746	1046	0.90	920	1126	1.06	1083
2000	840	0.60	613	900	0.66	674	984	0.82	838	1073	0.99	1012	1154	1.16	1185
2100	878	0.69	705	923	0.75	766	1015	0.91	930	1101	1.08	1104	1182	1.27	1298
2200	916	0.78	797	958	0.85	869	1046	1.01	1032	1129	1.19	1216	1209	1.39	1420
2300	954	0.89	910	993	0.96	981	1079	1.13	1155	1160	1.31	1339	1237	1.51	1543
2400	993	1.00	1022	1029	1.07	1093	1112	1.25	1277	1190	1.43	1461	1264	1.63	1666
2500	1031	1.13	1155	1066	1.20	1226	1145	1.39	1420	1220	1.57	1604	1292	1.77	1809

50TJ006 (5 TONS) — ALTERNATE MOTOR (BELT DRIVE)															
Airflow (Cfm)	External Static Pressure (in. wg)														
	1.0			1.2			1.4			1.6			1.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1500	1108	0.90	920	1186	1.08	1104	1263	1.30	1328	1343	1.58	1615	1431	1.79	1829
1600	1130	0.97	991	1205	1.15	1175	1278	1.35	1380	1350	1.61	1645	1424	1.80	1921
1700	1154	1.06	1083	1226	1.23	1257	1296	1.42	1451	1364	1.64	1676	1432	1.89	1931
1800	1178	1.14	1165	1249	1.32	1349	1316	1.52	1553	1382	1.72	1758	1447	1.95	1993
1900	1201	1.23	1257	1274	1.43	1461	1338	1.62	1656	1402	1.80	1870	1464	2.06	2095
2000	1226	1.33	1359	1297	1.53	1564	1363	1.73	1768	1424	1.94	1983	1484	2.16	2207
2100	1252	1.45	1482	1320	1.64	1676	1388	1.80	1891	1448	2.07	2115	1505	2.29	2340
2200	1280	1.58	1615	1345	1.77	1809	1410	1.97	2013	1473	2.20	2248	1529	2.43	2483
2300	1309	1.71	1747	1372	1.91	1952	1434	2.11	2156	1496	2.34	2391	1554	2.58	2637
2400	1336	1.80	1891	1400	2.06	2105	1459	2.26	2310	1519	2.48	2534	1578	2.76	2820
2500	1363	2.00	2044	1428	2.22	2269	1486	2.43	2483	1543	2.65	2708	1600	2.89	2953

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied drive is required (See Note 6)
- Shading** indicates field-supplied motor and drive are required.
- Maximum usable watts input is 1921 and maximum continuous bhp is 1.80. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

- Values include losses for filters, unit casings, and wet coils. See page 43 for accessory/FIOP static pressure information
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Alternate motor drive range 900 to 1300 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate.

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

50TJ007 (6 TONS) STANDARD MOTOR (BELT DRIVE)															
AIRFLOW (Cfm)	External Static Pressure (in. wg)														
	0.1			0.2			0.4			0.6			0.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	765	0.45	487	821	0.51	532	923	0.65	638	1019	0.81	843	1099	0.96	883
1900	802	0.45	539	854	0.58	585	953	0.73	700	1046	0.90	835	1126	1.06	965
2000	840	0.60	600	888	0.66	646	984	0.82	771	1073	0.99	907	1154	1.16	1047
2100	878	0.69	669	923	0.75	716	1015	0.91	843	1101	1.08	981	1182	1.27	1140
2200	916	0.78	739	958	0.85	795	1046	1.01	924	1129	1.19	1072	1209	1.39	1241
2300	954	0.89	827	993	0.96	883	1079	1.13	1022	1160	1.31	1173	1237	1.51	1344
2400	993	1.00	916	1029	1.07	973	1112	1.25	1123	1190	1.43	1275	1264	1.63	1447
2500	1031	1.13	1022	1066	1.20	1081	1145	1.39	1241	1220	1.57	1396	1292	1.77	1569
2600	1070	1.26	1131	1103	1.34	1199	1179	1.52	1353	1251	1.71	1517	1322	1.92	1700
2700	1109	1.41	1258	1140	1.48	1318	1212	1.67	1482	1283	1.87	1656	1352	2.09	1849
2800	1148	1.57	1396	1177	1.64	1456	1246	1.83	1621	1316	2.04	1805	1383	2.26	1997
2900	1188	1.74	1543	1215	1.81	1604	1281	2.00	1770	1349	2.22	1962	1413	2.44	2154
3000	1227	1.92	1700	1253	2.00	1770	1316	2.19	1936	1382	2.42	2136	1444	2.63	2317

50TJ007 (6 TONS) STANDARD MOTOR (BELT DRIVE)												
AIRFLOW (Cfm)	External Static Pressure (in. wg)											
	1.0			1.2			1.4			1.6		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
1800	1178	1.14	1031	1249	1.32	1182	1316	1.52	1353	1382	1.72	1526
1900	1201	1.23	1106	1274	1.43	1275	1338	1.62	1439	1402	1.83	1621
2000	1226	1.33	1190	1297	1.53	1361	1363	1.73	1534	1424	1.94	1718
2100	1252	1.45	1292	1320	1.64	1456	1388	1.85	1639	1448	2.07	1831
2200	1280	1.58	1404	1345	1.77	1569	1410	1.97	1744	1473	2.20	1945
2300	1309	1.71	1517	1372	1.91	1691	1434	2.11	1866	1496	2.34	2067
2400	1336	1.85	1639	1400	2.06	1823	1459	2.26	1997	1519	2.48	2188
2500	1363	2.00	1770	1428	2.22	1962	1486	2.43	2145	1543	2.65	2335
2600	1390	2.15	1901	1456	2.38	2102	1514	2.61	2300	1569	2.83	2487
2700	1418	2.31	2041	1483	2.56	2257	1543	2.80	2462	—	—	—
2800	1446	2.48	2188	1510	2.73	2403	—	—	—	—	—	—
2900	1476	2.67	2352	1537	2.92	2562	—	—	—	—	—	—
3000	1506	2.88	2529	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied drive is required. (See Note 6)
- Shading** indicates field-supplied motor and drive are required.
- Maximum usable watts input is 2120 and maximum continuous bhp is 2.40. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

- Values include losses for filters, unit casings, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
- Standard motor drive range: 1070 to 1460 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate.

Performance data (cont)



FAN PERFORMANCE – HORIZONTAL DISCHARGE UNITS (cont)

50TJ008 (7½ TONS) – STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	465	0.43	473	554	0.64	630	630	0.86	803	695	1.09	989	757	1.34	1199
2300	471	0.45	487	559	0.66	646	635	0.89	827	699	1.12	1014	760	1.37	1224
2400	482	0.50	524	569	0.71	684	645	0.95	875	708	1.18	1064	768	1.44	1284
2500	494	0.54	554	581	0.76	723	654	1.01	924	717	1.25	1123	776	1.51	1344
2550	501	0.57	577	587	0.79	747	659	1.05	956	722	1.29	1156	780	1.55	1378
2660	507	0.59	592	592	0.82	771	663	1.08	981	727	1.32	1182	784	1.58	1404
2700	520	0.65	638	604	0.89	827	672	1.14	1031	737	1.40	1250	793	1.66	1473
2800	533	0.71	684	615	0.95	875	683	1.20	1081	747	1.49	1327	802	1.75	1552
2900	546	0.77	731	626	1.02	932	693	1.27	1140	756	1.57	1396	813	1.84	1630
3000	559	0.83	779	637	1.09	989	704	1.35	1207	765	1.66	1473	823	1.94	1718
3100	572	0.90	835	648	1.17	1056	715	1.43	1275	775	1.74	1543	832	2.05	1814
3200	585	0.96	883	660	1.24	1114	727	1.52	1353	785	1.83	1621	841	2.15	1901
3300	598	1.03	940	671	1.32	1182	739	1.62	1439	795	1.91	1691	851	2.26	1997
3400	610	1.10	998	682	1.41	1258	750	1.72	1526	806	2.01	1779	860	2.36	2084
3500	623	1.17	1056	694	1.50	1335	761	1.82	1613	817	2.11	1866	870	2.47	2180
3600	636	1.25	1123	707	1.60	1422	772	1.93	1709	828	2.23	1971	880	2.57	2266
3700	649	1.33	1190	720	1.71	1517	783	2.03	1796	840	2.35	2076	890	2.69	2369
3750	655	1.37	1224	727	1.77	1569	789	2.09	1849	846	2.42	2126	896	2.75	2420

50TJ008 (7½ TONS) – STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2250	810	1.62	1439	850	1.91	1691	873	2.20	1945	863	2.50	2206	855	2.78	2445
2300	816	1.65	1465	859	1.94	1718	888	2.24	1980	897	2.55	2249	887	2.85	2504
2400	824	1.72	1526	872	2.01	1779	909	2.32	2050	931	2.64	2326	935	2.96	2595
2500	832	1.79	1587	882	2.09	1849	925	2.40	2119	955	2.72	2394	972	3.06	2678
2550	836	1.83	1621	887	2.13	1884	931	2.45	2162	964	2.77	2436	986	3.11	2718
2660	839	1.87	1656	891	2.17	1919	936	2.49	2197	973	2.82	2479	999	3.16	2759
2700	846	1.95	1726	898	2.26	1997	946	2.58	2275	987	2.91	2554	1019	3.26	2839
2800	855	2.04	1805	906	2.35	2076	954	2.67	2352	997	3.01	2637	1034	3.36	2917
2900	863	2.13	1884	913	2.44	2154	961	2.77	2436	1006	3.12	2727	—	—	—
3000	872	2.22	1962	921	2.54	2240	969	2.88	2529	1014	3.22	2807	—	—	—
3100	882	2.33	2058	930	2.65	2335	976	2.99	2620	1021	3.34	2902	—	—	—
3200	892	2.45	2162	939	2.76	2428	984	3.10	2710	—	—	—	—	—	—
3300	902	2.57	2266	948	2.88	2529	993	3.21	2799	—	—	—	—	—	—
3400	912	2.69	2369	958	3.01	2637	1002	3.34	2902	—	—	—	—	—	—
3500	921	2.82	2479	968	3.15	2751	—	—	—	—	—	—	—	—	—
3600	930	2.95	2587	978	3.29	2862	—	—	—	—	—	—	—	—	—
3700	940	3.07	2686	—	—	—	—	—	—	—	—	—	—	—	—
3750	945	3.14	2743	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

1. **Boldface** indicates a field-supplied drive is required (See Note 7.)
2. **Shading** indicates alternate drive is required
3. **Shading** indicates field-supplied motor and drive are required.
4. Maximum usable watts input is 2120 and maximum continuous bhp is 2.40. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

5. Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.
6. Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
7. Standard motor drive range: 590 to 840 rpm. Alternate motor drive range: 685 to 935 rpm. All other rpms require field-supplied drive.
8. Interpolation is permissible. Do not extrapolate.

FAN PERFORMANCE — HORIZONTAL DISCHARGE UNITS (cont)

50TJ009 (8½ TONS) — STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2550	501	0.57	577	587	0.79	747	659	1.05	956	722	1.29	1156	780	1.55	1378
2660	507	0.59	592	592	0.82	771	663	1.08	981	727	1.32	1182	784	1.58	1404
2700	520	0.65	638	604	0.89	827	672	1.14	1031	737	1.40	1250	793	1.66	1473
2800	533	0.71	684	615	0.95	875	683	1.20	1081	747	1.49	1327	802	1.75	1552
2900	546	0.77	731	626	1.02	932	693	1.27	1140	756	1.57	1396	813	1.84	1630
3000	559	0.83	779	637	1.09	989	704	1.35	1207	765	1.66	1473	823	1.94	1718
3100	572	0.90	835	648	1.17	1056	715	1.43	1275	775	1.74	1543	832	2.05	1814
3200	585	0.96	883	660	1.24	1114	727	1.52	1353	785	1.83	1621	841	2.15	1901
3300	598	1.03	940	671	1.32	1182	739	1.62	1439	795	1.91	1691	851	2.26	1997
3400	610	1.10	998	682	1.41	1258	750	1.72	1526	806	2.01	1779	860	2.36	2084
3500	623	1.17	1056	694	1.50	1335	761	1.82	1613	817	2.11	1866	870	2.47	2180
3600	636	1.25	1123	707	1.60	1422	772	1.93	1709	828	2.23	1971	880	2.57	2266
3700	649	1.33	1190	720	1.71	1517	783	2.03	1796	840	2.35	2076	890	2.69	2369
3750	655	1.37	1224	727	1.77	1569	789	2.09	1849	846	2.42	2136	896	2.75	2420
3800	661	1.41	1258	733	1.82	1613	795	2.15	1901	852	2.48	2188	901	2.80	2462
3900	674	1.49	1327	746	1.93	1709	806	2.26	1997	863	2.61	2300	912	2.93	2571
4000	687	1.57	1396	759	2.05	1814	817	2.38	2102	874	2.75	2420	923	3.08	2694
4100	699	1.60	1473	772	2.17	1919	828	2.50	2206	885	2.88	2529	935	3.23	2815
4200	712	1.75	1552	785	2.30	2032	840	2.64	2326	897	3.03	2653	947	3.39	2940
4250	719	1.80	1595	792	2.37	2093	846	2.71	2386	903	3.10	2710	—	—	—

50TJ009 (8½ TONS) — STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
2550	836	1.83	1621	887	2.13	1884	931	2.45	2182	964	2.77	2436	986	3.11	2718
2660	839	1.87	1656	891	2.17	1919	936	2.49	2197	973	2.82	2479	999	3.16	2759
2700	846	1.95	1726	898	2.26	1997	946	2.58	2275	987	2.91	2554	1019	3.26	2839
2800	855	2.04	1805	906	2.35	2076	954	2.67	2352	997	3.01	2637	1034	3.36	2917
2900	863	2.13	1884	913	2.44	2154	961	2.77	2436	1006	3.12	2727	—	—	—
3000	872	2.22	1962	921	2.54	2240	969	2.88	2529	1014	3.22	2807	—	—	—
3100	882	2.33	2058	930	2.65	2335	976	2.99	2620	1021	3.34	2902	—	—	—
3200	892	2.45	2162	939	2.76	2428	984	3.10	2710	—	—	—	—	—	—
3300	902	2.57	2266	948	2.88	2529	993	3.21	2799	—	—	—	—	—	—
3400	912	2.69	2369	958	3.01	2637	1002	3.34	2902	—	—	—	—	—	—
3500	921	2.82	2479	968	3.15	2751	—	—	—	—	—	—	—	—	—
3600	930	2.95	2587	978	3.29	2862	—	—	—	—	—	—	—	—	—
3700	940	3.07	2686	—	—	—	—	—	—	—	—	—	—	—	—
3750	945	3.14	2743	—	—	—	—	—	—	—	—	—	—	—	—
3800	949	3.20	2781	—	—	—	—	—	—	—	—	—	—	—	—
3900	959	3.33	2894	—	—	—	—	—	—	—	—	—	—	—	—
4000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4250	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

1. **Boldface** indicates a field-supplied drive is required. (See Note 6.)
2. **Shading** indicates field-supplied motor and drive are required
3. Maximum usable watts input is 2120 and maximum continuous bhp is 2.40. Extensive motor and electrical testing on these units ensures that the full range of the motor can be utilized with confidence. Using

your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45.

4. Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.
5. Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify.
6. Standard motor drive range: 685 to 935 rpm. All other rpms require field-supplied drive.
7. Interpolation is permissible. Do not extrapolate.

Performance data (cont)



FAN PERFORMANCE – HORIZONTAL DISCHARGE UNITS (cont)

50TJ012 (10 TONS) – STANDARD AND ALTERNATE MOTORS (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	484	0.55	562	560	0.70	677	631	0.87	810	690	1.03	940	747	1.20	1081
3100	495	0.61	607	570	0.76	723	638	0.92	851	699	1.10	998	755	1.27	1140
3200	505	0.66	646	579	0.81	763	646	0.98	899	708	1.16	1047	761	1.34	1199
3300	516	0.72	692	589	0.87	810	655	1.05	956	717	1.23	1106	767	1.40	1250
3400	527	0.78	739	599	0.93	859	664	1.11	1006	724	1.30	1165	775	1.48	1318
3500	537	0.85	795	609	0.99	907	672	1.18	1064	731	1.36	1216	784	1.56	1387
3600	548	0.92	851	619	1.05	956	680	1.24	1114	738	1.43	1275	794	1.64	1456
3700	560	1.00	916	629	1.12	1014	688	1.31	1173	747	1.51	1344	802	1.73	1534
3800	571	1.08	981	639	1.19	1072	698	1.39	1241	756	1.60	1422	810	1.81	1604
3900	582	1.16	1047	649	1.27	1140	708	1.47	1310	764	1.69	1499	816	1.89	1674
4000	593	1.25	1123	659	1.35	1207	717	1.56	1387	773	1.78	1578	823	1.98	1753
4100	605	1.35	1207	670	1.44	1284	727	1.65	1465	781	1.86	1648	832	2.08	1840
4200	616	1.45	1292	680	1.53	1361	737	1.74	1543	789	1.95	1726	841	2.18	1927
4300	628	1.56	1387	690	1.63	1447	747	1.83	1621	798	2.05	1814	849	2.30	2032
4400	639	1.67	1482	701	1.73	1534	757	1.92	1700	807	2.16	1910	858	2.41	2177
4500	651	1.78	1578	712	1.84	1630	767	2.02	1788	817	2.27	2006	866	2.51	2265
4600	662	1.91	1691	722	1.95	1726	777	2.13	1884	827	2.38	2102	874	2.62	2362
4700	674	2.03	1796	733	2.07	1831	787	2.24	1980	836	2.50	2256	882	2.73	2460
4800	686	2.17	1919	744	2.20	1945	797	2.36	2084	846	2.62	2362	891	2.85	2569
4900	698	2.31	2041	755	2.33	2058	808	2.48	2238	856	2.73	2460	900	2.99	2698
5000	710	2.45	2212	766	2.47	2230	818	2.61	2353	866	2.86	2578	910	3.12	2819

50TJ012 (10 TONS) – STANDARD AND ALTERNATE MOTORS (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3000	800	1.38	1233	850	1.52	1353	879	1.38	1233	925	1.81	1604	964	1.92	1761
3100	805	1.44	1284	857	1.63	1447	896	1.66	1473	935	1.93	1709	975	1.98	1811
3200	812	1.51	1344	862	1.71	1517	908	1.85	1639	944	2.01	1836	984	2.09	1903
3300	819	1.59	1413	867	1.78	1578	915	1.98	1753	952	2.11	1920	993	2.22	2014
3400	827	1.67	1482	873	1.85	1639	920	2.07	1831	963	2.21	2005	1001	2.31	2091
3500	833	1.75	1552	880	1.94	1718	926	2.15	1901	970	2.41	2134	1007	2.46	2221
3600	840	1.83	1621	888	2.04	1805	931	2.23	1971	976	2.47	2230	1017	2.62	2362
3700	847	1.92	1700	895	2.13	1884	938	2.33	2108	981	2.56	2309	1024	2.77	2496
3800	856	2.02	1788	901	2.23	1971	945	2.44	2203	986	2.65	2389	1029	2.89	2605
3900	865	2.12	1875	908	2.32	2050	953	2.55	2300	993	2.75	2478	1034	3.00	2707
4000	875	2.22	1962	915	2.42	2186	960	2.65	2389	1000	2.87	2587	1039	3.10	2800
4100	883	2.32	2050	924	2.54	2291	966	2.76	2487	1008	2.99	2698	1046	3.21	2904
4200	889	2.41	2177	934	2.65	2389	972	2.87	2587	1015	3.12	2819	1053	3.34	3029
4300	896	2.51	2265	943	2.77	2406	980	2.99	2698	1021	3.23	2923	1061	3.48	3166
4400	903	2.62	2362	951	2.89	2603	990	3.12	2819	1028	3.36	3049	1068	3.61	3241
4500	912	2.74	2469	958	3.00	2707	999	3.26	2962	1035	3.51	3161	1074	3.74	3346
4600	921	2.87	2587	965	3.11	2810	1008	3.39	3078	1041	3.68	3295	1081	3.90	3450
4700	930	3.00	2707	972	3.23	2923	1017	3.45	3224	1048	3.80	3436	1088	4.13	3552
4800	938	3.14	2838	980	3.37	3058	1025	3.55	3362	1055	3.85	3584	1095	4.30	3653
4900	946	3.27	2962	990	3.51	3149	1034	3.71	3505	1062	3.98	3741	1101	4.45	3753
5000	954	3.39	3078	998	3.62	3271	1042	3.85	3654	1068	4.08	3907	1108	4.59	3851

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied or alternate (as appropriate) drive is required. (See Note 7.)
- Shading** indicates an alternate motor and drive are required
- Shading** indicates field-supplied motor and drive are required
- Maximum usable watts input is 2120 with standard motor and 2615 with alternate motor. Maximum continuous bhp is 2.40 with standard motor and 2.90 with alternate motor. Extensive motor and electrical

testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

- Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45
- Standard motor drive range: 685 to 935 rpm. Alternate motor drive range: 835 to 1085 rpm. All other rpms require field-supplied drive.
- Interpolation is permissible. Do not extrapolate

FAN PERFORMANCE – HORIZONTAL DISCHARGE UNITS (cont)

50TJ014 (12½ TONS) – STANDARD AND ALTERNATE MOTORS (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	607	0.97	947	670	1.18	1113	732	1.37	1267	782	1.56	1423	833	1.73	1565
3800	621	1.05	1010	681	1.25	1170	742	1.45	1332	795	1.66	1506	842	1.82	1641
3900	636	1.13	1073	693	1.32	1226	751	1.53	1398	808	1.76	1590	851	1.92	1725
4000	650	1.21	1137	705	1.40	1291	761	1.61	1464	819	1.86	1674	861	2.02	1811
4100	665	1.30	1210	717	1.48	1357	772	1.71	1548	830	1.96	1759	871	2.13	1905
4200	680	1.39	1283	728	1.57	1431	783	1.81	1632	839	2.05	1836	883	2.25	2009
4300	696	1.49	1365	739	1.66	1506	794	1.91	1717	848	2.14	1914	896	2.38	2123
4400	711	1.60	1456	750	1.75	1582	805	2.02	1811	857	2.24	2000	908	2.51	2237
4500	727	1.70	1540	762	1.85	1666	817	2.12	1897	867	2.35	2096	919	2.63	2343
4600	742	1.82	1641	774	1.96	1759	828	2.23	1992	877	2.46	2193	929	2.75	2450
4700	758	1.94	1742	786	2.07	1854	840	2.34	2088	888	2.59	2307	938	2.87	2557
4800	773	2.06	1845	799	2.18	1948	852	2.46	2193	899	2.72	2423	947	2.98	2656
4900	789	2.19	1957	812	2.30	2053	863	2.57	2290	910	2.86	2548	957	3.11	2773
5000	805	2.32	2070	826	2.43	2166	875	2.70	2405	921	2.99	2665	966	3.24	2891
5100	821	2.47	2202	840	2.57	2290	887	2.83	2521	932	3.13	2792	976	3.38	3019
5200	837	2.61	2325	854	2.71	2414	898	2.96	2638	943	3.28	2928	987	3.53	3157
5300	853	2.76	2459	868	2.85	2539	909	3.09	2755	955	3.42	3056	998	3.69	3304
5400	869	2.92	2602	882	3.01	2683	920	3.24	2891	967	3.57	3193	1009	3.86	3461
5500	885	3.09	2755	897	3.17	2828	932	3.38	3019	978	3.72	3331	1029	4.03	3618
5600	901	3.26	2910	911	3.33	2973	943	3.54	3166	990	3.87	3470	1031	4.20	3775
5700	917	3.44	3074	926	3.50	3129	956	3.70	3313	1002	4.03	3618	1042	4.38	3943
5800	933	3.62	3239	941	3.68	3294	968	3.87	3470	1013	4.20	3775	1053	4.56	4111
5900	949	3.81	3414	956	3.87	3470	981	4.05	3637	1025	4.37	3934	1065	4.74	4279
6000	965	4.01	3600	972	4.06	3646	995	4.23	3804	1037	4.55	4102	1076	4.92	4447
6100	981	4.21	3785	987	4.26	3832	1008	4.42	3981	1042	4.73	4270	1088	5.10	4614
6200	997	4.42	3981	1002	4.46	4018	1022	4.62	4167	1058	4.91	4437	1100	5.29	4791
6300	1014	4.64	4186	1018	4.68	4223	1036	4.83	4363	1070	5.11	4624	1112	5.49	4893

50TJ014 (12½ TONS) – STANDARD AND ALTERNATE MOTORS (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
3700	879	1.95	1751	927	2.17	1940	973	2.38	2123	1013	2.57	2290	1046	2.73	2432
3800	889	2.03	1819	934	2.26	2018	980	2.48	2210	1022	2.69	2396	1058	2.87	2557
3900	898	2.12	1897	942	2.36	2105	987	2.59	2307	1030	2.81	2503	1068	3.01	2683
4000	908	2.21	1974	950	2.46	2193	994	2.70	2405	1037	2.92	2602	1077	3.14	2801
4100	917	2.32	2070	960	2.55	2272	1001	2.81	2503	1045	3.04	2710	1085	3.21	2919
4200	925	2.44	2175	969	2.65	2370	1009	2.92	2602	1051	3.17	2828	1092	3.40	3037
4300	935	2.56	2281	979	2.77	2468	1018	3.03	2701	1058	3.29	2937	1100	3.53	3157
4400	945	2.68	2387	988	2.89	2575	1028	3.14	2801	1066	3.41	3047	1106	3.67	3285
4500	955	2.82	2512	996	3.02	2692	1037	3.25	2901	1074	3.54	3166	1113	3.81	3414
4600	967	2.96	2638	1005	3.16	2819	1046	3.38	3019	1084	3.66	3276	1121	3.95	3544
4700	980	3.11	2773	1015	3.30	2946	1056	3.52	3147	1093	3.79	3396	1129	4.09	3674
4800	992	3.26	2910	1025	3.45	3083	1064	3.67	3285	1103	3.92	3516	1137	4.22	3795
4900	1003	3.41	3047	1036	3.61	3230	1073	3.83	3433	1112	4.07	3655	1147	4.36	3925
5000	1014	3.56	3184	1049	3.79	3396	1083	4.00	3590	1121	4.23	3804	1157	4.50	4055
5100	1024	3.71	3322	1061	3.96	3553	1093	4.17	3748	1129	4.40	3962	1166	4.66	4202
5200	1033	3.84	3442	1073	4.14	3720	1103	4.34	3906	1138	4.58	4130	1175	4.82	4354
5300	1042	3.98	3572	1084	4.31	3878	1115	4.53	4157	1148	4.76	4326	1184	5.01	4531
5400	1051	4.14	3720	1095	4.49	4046	1128	4.74	4279	1158	4.96	4475	1193	5.20	4707
5500	1061	4.30	3818	1105	4.66	4204	1140	4.94	4465	1168	5.15	4661	1202	5.40	4893
5600	1071	4.46	4018	1114	4.81	4344	1152	5.14	4652	1180	5.36	4856	1211	5.60	5078
5700	1081	4.64	4186	1123	4.98	4503	1163	5.34	4837	1193	5.59	5069	—	—	—
5800	1092	4.84	4372	1132	5.16	4661	1174	5.54	5023	—	—	—	—	—	—
5900	1102	5.04	4558	1142	5.34	4837	1183	5.72	5189	—	—	—	—	—	—
6000	1114	5.24	4745	1152	5.53	5013	—	—	—	—	—	—	—	—	—
6100	1125	5.45	4939	1162	5.73	5196	—	—	—	—	—	—	—	—	—
6200	1136	5.66	5133	—	—	—	—	—	—	—	—	—	—	—	—
6300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input at Fan
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates a field-supplied or alternate (as appropriate) drive is required. (See Note 7)
- Shading** indicates alternate motor and drive are required.
- Shading** indicates field-supplied motor and drive are required.
- Maximum usable watts input is 3775 with standard motor and 4400 with alternate motor. Maximum continuous bhp is 4.20 with standard motor and 4.90 with alternate motor. Extensive motor and electrical

testing on these units ensures that the full range of the motor can be utilized with confidence. Using your fan motors up to the wattage ratings shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

- Values include losses for filters, unit casing, and wet coils. See page 43 for accessory/FIOP static pressure information.
- Use of a field-supplied motor may affect wire sizing. Contact Carrier representative to verify. For additional information on motor performance, refer to Evaporator-Fan Motor Performance table on page 45
- Standard motor drive range: 860 to 1080 rpm. Alternate motor drive range: 900 to 1260 rpm. All other rpms require field-supplied drive
- Interpolation is permissible. Do not extrapolate.

Performance data (cont)



FAN PERFORMANCE — 50TJ016-028 UNITS

50TJ016 (15 TONS) — STANDARD MOTOR (BELT DRIVE); 208/230 AND 460-V UNITS																		
Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.2			0.4			0.6			0.8			1.0			1.1		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
4500	790	1.02	906	879	1.23	1092	960	1.43	1270	1039	1.64	1456	1114	1.85	1643	1152	1.97	1751
4800	830	1.21	1075	915	1.43	1270	993	1.64	1456	1068	1.86	1652	1140	2.09	1856	1175	2.21	1958
5100	870	1.42	1261	953	1.65	1465	1028	1.88	1670	1099	2.11	1874	1168	2.35	2087	1202	2.47	2194
5400	911	1.66	1474	991	1.90	1687	1063	2.15	1909	1131	2.39	2123	1197	2.64	2345	1230	2.77	2456
5700	952	1.92	1705	1030	2.18	1936	1099	2.44	2167	1165	2.69	2389	1228	2.95	2620	1259	3.09	2740
6000	994	2.21	1963	1069	2.48	2202	1136	2.76	2451	1200	3.03	2691	1260	3.29	2922	1290	3.43	3047
6300	1035	2.53	2247	1109	2.82	2504	1174	3.10	2753	1235	3.39	3011	1294	3.67	3259	1323	3.81	3384
6600	1078	2.88	2558	1148	3.18	2824	1213	3.48	3019	1271	3.78	3357	1329	4.07	3615	1357	4.22	3748
6900	1120	3.26	2895	1188	3.58	3179	1251	3.89	3455	1309	4.20	3730	—	—	—	—	—	—
7200	1163	3.68	3268	1229	4.01	3561	—	—	—	—	—	—	—	—	—	—	—	—
7500	1205	4.13	3668	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

50TJ016 (15 TONS) — STANDARD MOTOR (BELT DRIVE); 208/230 and 460-V UNITS																
Airflow (Cfm)	External Static Pressure (in. wg)															
	1.2			1.4			1.6			1.8			2.0			
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	
4500	1189	2.09	1856	1264	2.36	2096	1338	2.67	2371	1410	3.00	2664	1479	3.36	2984	
4800	1210	2.32	2060	1280	2.58	2291	1351	2.88	2558	1420	3.20	2842	1488	3.55	3153	
5100	1235	2.59	2300	1301	2.85	2531	1367	3.13	2780	1433	3.44	3055	1499	3.78	3357	
5400	1262	2.89	2567	1325	3.15	2798	1386	3.42	3037	1449	3.72	3304	1512	4.05	3597	
5700	1290	3.22	2860	1351	3.48	3091	1410	3.76	3339	1468	4.05	3597	—	—	—	
6000	1320	3.57	3171	1379	3.85	3419	1436	4.13	3668	—	—	—	—	—	—	
6300	1351	3.95	3508	1408	4.24	3766	—	—	—	—	—	—	—	—	—	
6600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
6900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
7200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
7500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- 1 Factory-shipped motor drive range is 1194 to 1526 rpm. Other rpms may require a field-supplied drive.
- 2 Maximum continuous bhp is 4.25 and maximum continuous watts are 3775. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm.

3. Static pressure losses (i.e., economizer) must be added to external static pressure before entering Fan Performance table.
4. Interpolation is permissible. Do not extrapolate.
5. Fan performance is based on wet coils, clean filters, and casing losses. See page 43 for accessory/FIOP static pressure information.
6. Extensive motor and drive testing on these units ensures that the full horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.



FAN PERFORMANCE — 50TJ016-028 UNITS (cont)

50TJ016 (15 TONS) — STANDARD MOTOR (BELT DRIVE); 575 V UNITS

Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.2			0.4			0.6			0.8			1.0			1.1		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
4500	790	1.02	906	879	1.23	1092	960	1.43	1270	1039	1.64	1456	1114	1.85	1643	1152	1.97	1751
4800	830	1.21	1075	915	1.43	1270	993	1.64	1456	1068	1.86	1652	1140	2.09	1856	1175	2.21	1958
5100	870	1.42	1261	953	1.65	1465	1028	1.88	1670	1099	2.11	1874	1168	2.35	2087	1202	2.47	2194
5400	911	1.66	1474	991	1.90	1687	1063	2.15	1909	1131	2.39	2123	1197	2.64	2345	1230	2.77	2456
5700	952	1.92	1705	1030	2.18	1936	1099	2.44	2167	1165	2.69	2389	1228	2.95	2620	1259	3.09	2740
6000	994	2.21	1963	1069	2.48	2202	1136	2.76	2451	1200	3.03	2691	1260	3.29	2922	1290	3.43	3047
6300	1035	2.53	2247	1109	2.82	2504	1174	3.10	2753	1235	3.39	3011	—	—	—	—	—	—
6600	1078	2.88	2558	1148	3.18	2824	—	—	—	—	—	—	—	—	—	—	—	—
6900	1120	3.26	2895	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

50TJ016 (15 TONS) — STANDARD MOTOR (BELT DRIVE); 575 V UNITS

Airflow (Cfm)	External Static Pressure (in. wg)														
	1.2			1.4			1.6			1.8			2.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
4500	1189	2.09	1856	1264	2.36	2096	1338	2.67	2371	1410	3.00	2664	1479	3.36	2984
4800	1210	2.32	2060	1280	2.58	2291	1351	2.88	2558	1420	3.20	2842	—	—	—
5100	1235	2.59	2300	1301	2.85	2531	1367	3.13	2780	1433	3.44	3055	—	—	—
5400	1262	2.89	2567	1325	3.15	2798	1386	3.42	3037	—	—	—	—	—	—
5700	1290	3.22	2860	—	—	—	—	—	—	—	—	—	—	—	—
6000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

1. Factory-shipped motor drive range is 896 to 1161 rpm. Other rpms may require a field-supplied drive.
2. Maximum continuous bhp is 3.45 and maximum continuous watts are 3065. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm.

3. Static pressure losses (i.e., economizer) must be added to external static pressure before entering Fan Performance table.
4. Interpolation is permissible. Do not extrapolate.
5. Fan performance is based on wet coils, clean filters, and casing losses. See page 43 for accessory/FIOP static pressure information.
6. Extensive motor and drive testing on these units ensures that the full horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

Performance data (cont)



FAN PERFORMANCE — 50TJ016-028 UNITS (cont)

50TJ020 (18 TONS) — STANDARD MOTOR (BELT DRIVE)															
Airflow (Cfm)	External Static Pressure (in. wg)														
	0.2			0.4			0.6			0.8			1.0		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
5000	617	1.00	903	721	1.30	1157	819	1.60	1424	909	1.90	1710	994	2.30	2019
5500	658	1.30	1143	757	1.60	1418	850	1.90	1701	935	2.20	2000	1015	2.60	2318
6000	702	1.60	1428	796	1.90	1723	884	2.30	2025	965	2.60	2339	1041	3.00	2669
6500	747	2.00	1757	835	2.30	2073	919	2.70	2394	997	3.10	2725	1070	3.40	3069
7000	792	2.40	2138	877	2.80	2476	957	3.20	2816	1031	3.50	3165	1102	3.90	3525
7200	856	2.60	2311	893	3.00	2657	973	3.40	3006	1045	3.74	3362	1115	4.14	3729
7500	838	2.90	2571	918	3.30	2929	996	3.70	3290	1067	4.10	3658	1135	4.50	4035
8000	885	3.40	3060	962	3.90	3440	1036	4.30	3822	1105	4.70	4209	1170	5.20	4604
8500	932	4.00	3610	1005	4.50	4011	1077	4.90	4414	1143	5.40	4821	—	—	—
9000	980	4.70	4223	1050	5.20	4647	1119	5.70	5071	—	—	—	—	—	—
9500	1028	5.50	4904	—	—	—	—	—	—	—	—	—	—	—	—
10000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

50TJ020 (18 TONS) — STANDARD MOTOR (BELT DRIVE)													
Airflow (Cfm)	External Static Pressure (in. wg)												
	1.2			1.4			1.6			1.8			
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	
5000	1076	2.60	2351	1155	3.00	2704	1230	3.40	3076	1302	3.90	3462	
5500	1093	3.00	2658	1168	3.40	3017	1240	3.80	3396	1310	4.20	3793	
6000	1115	3.40	3018	1186	3.80	3385	1255	4.20	3771	1322	4.70	4175	
6500	1140	3.80	3429	1208	4.30	3805	1274	4.70	4198	1338	5.20	4609	
7000	1169	4.40	3898	1233	4.80	4285	1296	5.20	4687	1358	5.70	5106	
7200	1181	4.60	4108	1245	5.04	4500	—	—	—	—	—	—	
7500	1199	4.90	4422	1262	5.40	4822	—	—	—	—	—	—	
8000	1232	5.60	5008	—	—	—	—	—	—	—	—	—	
8500	—	—	—	—	—	—	—	—	—	—	—	—	
9000	—	—	—	—	—	—	—	—	—	—	—	—	
9500	—	—	—	—	—	—	—	—	—	—	—	—	
10000	—	—	—	—	—	—	—	—	—	—	—	—	

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

1. Factory-shipped motor drive range is 1047 to 1251 rpm. Other rpms may require a field-supplied drive.
2. Maximum continuous bhp is 5.90 and maximum continuous watts are 5180. Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm.

3. Static pressure losses (i.e., economizer) must be added to external static pressure before entering Fan Performance table.
4. Interpolation is permissible. Do not extrapolate.
5. Fan performance is based on wet coils, clean filters, and casing losses. See page 43 for accessory/FIOP static pressure information.
6. Extensive motor and drive testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.



FAN PERFORMANCE — 50TJ016-028 UNITS (cont)

50TJ024 (20 TONS) — STANDARD MOTOR (BELT DRIVE)

External Static Pressure (in. wg)																
Airflow (Cfm)	0.2			0.4			0.6			0.8			1.0			
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	
5000	617	1.00	903	721	1.30	1157	819	1.60	1424	909	1.90	1710	994	2.30	2019	
5500	658	1.30	1143	757	1.60	1418	850	1.90	1701	935	2.20	2000	1015	2.60	2318	
6000	702	1.60	1428	796	1.90	1723	884	2.30	2025	965	2.60	2339	1041	3.00	2669	
6500	747	2.00	1757	835	2.30	2073	919	2.70	2394	997	3.10	2725	1070	3.40	3069	
7000	792	2.40	2138	877	2.80	2476	957	3.20	2816	1031	3.50	3165	1102	3.90	3525	
7500	838	2.90	2571	918	3.30	2929	996	3.70	3290	1067	4.10	3658	1135	4.50	4035	
8000	885	3.40	3060	962	3.90	3440	1036	4.30	3822	1105	4.70	4209	1170	5.20	4604	
8500	932	4.00	3610	1005	4.50	4011	1077	4.90	4414	1143	5.40	4821	1206	5.90	5234	
9000	980	4.70	4223	1050	5.20	4647	1119	5.70	5071	1183	6.20	5498	1244	6.60	5930	
9500	1028	5.50	4904	1096	6.00	5350	1162	6.50	5796	1224	7.00	6243	1283	7.50	6695	
10000	1077	6.30	5655	1141	6.90	6123	1205	7.40	6591	1266	7.90	7059	1323	8.40	7531	

50TJ024 (20 TONS) — STANDARD MOTOR (BELT DRIVE)

30TJ024 (20 TONS) — STANDARD MOTOR (BEEF DRIVE)																
Airflow (Cfm)	External Static Pressure (in. wg)															
	1.2			1.4			1.6			1.8			2.0			
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	
5000	1076	2.60	2351	1155	3.00	2704	1230	3.40	3076	1302	3.90	3462	1374	4.40	3848	
5500	1093	3.00	2658	1168	3.40	3017	1240	3.80	3396	1310	4.20	3793	1380	4.60	4190	
6000	1115	3.40	3018	1186	3.80	3385	1255	4.20	3771	1322	4.70	4175	1389	5.20	4579	
6500	1140	3.80	3429	1208	4.30	3805	1274	4.70	4198	1338	5.20	4609	1402	5.70	5020	
7000	1169	4.40	3898	1233	4.80	4285	1296	5.20	4687	1358	5.70	5106	1420	6.20	5525	
7500	1199	4.90	4422	1262	5.40	4822	1322	5.90	5235	1381	6.30	5662	1440	6.70	6089	
8000	1232	5.60	5008	1292	6.10	5422	1350	6.50	5847	1407	7.00	6286	1464	7.50	6725	
8500	1266	6.30	5655	1324	6.80	6085	1380	7.30	6524	1435	7.80	6975	1490	8.30	7426	
9000	1302	7.10	6369	1359	7.60	6816	1413	8.10	7270	1466	8.70	7735	1519	9.30	8200	
9500	1340	8.00	7152	1394	8.50	7616	1447	9.10	8088	1508	9.40	8428	—	—	—	
10000	1378	9.00	8007	1431	9.50	8489	—	—	—	—	—	—	—	—	—	

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Input Watts to Motor

NOTES:

- Boldface** indicates additional capability of 460 v motor
- Factory-shipped motor drive range is 1238 to 1494 rpm. Other rpms may require a field-supplied drive
- Maximum continuous bhp is 8.7 (208/230, 575 v) or 9.5 (460 v) and maximum continuous watts are 7915 (208/230, 575 v) or 8640 (460 v). Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm

- Static pressure losses (i.e., economizer) must be added to external static pressure before entering Fan Performance table
- Interpolation is permissible. Do not extrapolate.
- Fan performance is based on wet coils, clean filters, and casing losses. See page 43 for accessory/FIOP static pressure information
- Extensive motor and drive testing on these units ensures that the full horsepower range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected

Performance data (cont)



FAN PERFORMANCE — 50TJ016-028 UNITS (cont)

50TJ028 (25 TONS) — STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)																	
	0.2			0.4			0.6			0.8			1.0			1.2		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
5,000	645	1.06	972	750	1.33	1226	844	1.63	1497	933	1.94	1789	1017	2.28	2104	1098	2.65	2442
5,500	690	1.34	1231	789	1.63	1505	878	1.95	1793	961	2.28	2098	1041	2.63	2422	1117	3.01	2768
6,000	736	1.67	1536	830	1.99	1831	915	2.32	2136	944	2.67	2456	1069	3.03	2792	1141	3.42	3147
6,500	784	2.05	1890	872	2.40	2206	953	2.75	2530	1028	3.11	2866	1100	3.49	3216	1169	3.89	3583
7,000	832	2.49	2297	916	2.86	2634	993	3.23	2978	1065	3.62	3332	1134	4.01	3697	1200	4.43	4076
7,500	881	3.00	2761	961	3.39	3119	1035	3.78	3483	1104	4.19	3855	1170	4.60	4237	1233	5.03	4631
8,000	930	3.57	3284	1007	3.98	3664	1077	4.40	4049	1144	4.82	4440	1207	5.25	4840	1268	5.70	5249
8,500	980	4.20	3873	1053	4.64	4274	1121	5.08	4679	1185	5.53	5090	1246	5.98	5508	1305	6.44	5934
9,000	1030	4.92	4528	1100	5.38	4951	1166	5.84	5377	1228	6.31	5808	1286	6.78	6244	1343	7.26	6689
9,500	1081	5.70	5254	1148	6.19	5700	1211	6.67	6146	1271	7.16	6597	1328	7.66	7053	1383	8.16	7515
10,000	1132	6.57	6055	1197	7.08	6523	1257	7.59	6991	1315	8.10	7462	1370	8.62	7937	1423	9.14	8418
10,500	1183	7.53	6935	1245	8.06	7425	1304	8.59	7913	1360	9.13	8404	1413	9.66	8899	1465	10.21	9400
11,000	1235	8.57	7896	1295	9.13	8408	1351	9.68	8918	1405	10.24	9430	1457	10.80	9944	1507	11.36	10,465
11,250	1261	9.13	8408	1320	9.70	8932	1375	10.26	9452	1428	10.83	9974	1479	11.40	10,499	—	—	—

50TJ028 (25 TONS) — STANDARD MOTOR (BELT DRIVE)

Airflow (Cfm)	External Static Pressure (in. wg)								
	1.4			1.6			1.8		
	Rpm	Bhp	Watts	Rpm	Bhp	Watts	Rpm	Bhp	Watts
5,000	1176	3.04	2801	1250	3.45	3177	1321	3.87	3568
5,500	1191	3.40	3134	1263	3.82	3519	1332	4.26	3922
6,000	1212	3.82	3521	1280	4.25	3915	1346	4.70	4324
6,500	1236	4.31	3966	1301	4.74	4366	1364	5.19	4784
7,000	1263	4.85	4470	1326	5.30	4880	1386	5.76	5307
7,500	1294	5.47	5038	1353	5.93	5458	1411	6.40	5893
8,000	1327	6.16	5670	1384	6.63	6102	1440	7.11	6549
8,500	1362	6.92	6371	1416	7.40	6816	1470	7.90	7215
9,000	1398	7.75	7141	1451	8.25	7602	1503	8.77	8074
9,500	1436	8.67	7985	1487	9.19	8462	—	—	—
10,000	1475	9.67	8905	1525	10.21	9400	—	—	—
10,500	1515	10.76	9907	—	—	—	—	—	—
11,000	—	—	—	—	—	—	—	—	—
11,250	—	—	—	—	—	—	—	—	—

LEGEND

Bhp — Brake Horsepower Input to Fan
Watts — Watts Input to Motor

NOTES:

1. **Boldface** indicates additional capability of 460-v motor.
2. Factory-shipped motor drive range is 1323 to 1579 rpm. Other rpms may require a field-supplied drive.
3. Maximum continuous bhp is 10.26 (208/230, 575 v) or 11.80 (460 v) and maximum continuous watts are 9510 (208/230, 575 v) or 11,000 (460 v). Do not adjust motor rpm such that motor maximum bhp and/or watts is exceeded at the maximum operating cfm.

4. Static pressure losses (i.e., economizer) must be added to external static pressure before entering Fan Performance table.
5. Interpolation is permissible. Do not extrapolate.
6. Fan performance is based on wet coils, clean filters, and casing losses. See page 43 for accessory/FIOP static pressure information.
7. Extensive motor and drive testing on these units ensures that the full horsepower and watts range of the motor can be utilized with confidence. Using your fan motors up to the watts or bhp rating shown will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

ACCESSORY/FIOP STATIC PRESSURE (in. wg) — 50TJ004-014

UNIT 50TJ	UNIT VOLTAGE	CFM	1 HEATER MODULE*	2 HEATER MODULES*	ECONOMIZER*
004-007	All	900	.05	.15	.05
		1200	.07	.16	.05
		1400	.09	.16	.05
		1600	.09	.16	.05
		1800	.10	.17	.05
		2000	.11	.17	.05
		2200	.11	.17	.05
		2400	.12	.18	.05
		2600	.13	.18	.05
		3000	.15	.19	.05
008-014	All	2200	.02	.03	.02
		2500	.03	.05	.02
		3000	.05	.07	.03
		3500	.07	.09	.04
		4000	.08	.12	.05
		4500	.10	.14	.06
		5000	.12	.16	.07
		5500	.14	.19	.08
		6000	.16	.21	.09
		6250	.17	.20	.09

LEGEND

FIOP — Factory-Installed Option

*The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should then be used in conjunction with the Fan Performance table to determine blower rpm and watts.

NOTE: Heaters are rated at 208/240 v and 480 v

ACCESSORY/FIOP STATIC PRESSURE (in. wg) — 50TJ016-028

UNIT 50TJ	HEATER RATED VOLTAGE	CFM	ELECTRIC HEATERS PRESSURE DROP* (kW)			ECONOMIZER PRESSURE DROP*	FACTORY-ASSEMBLED HORIZONTAL ADAPTER CURB PRESSURE INCREASE**
016	208/240-3-60	4,000	0.05 (26/34)	0.06 (42/56)	0.07 (56/75)	0.03	0.68
		5,000	0.07 (26/34)	0.08 (42/56)	0.10 (56/75)	0.05	0.65
		6,000	0.09 (26/34)	0.12 (42/56)	0.15 (56/75)	0.07	0.60
		7,200	0.11 (26/34)	0.16 (42/56)	0.20 (56/75)	0.09	0.48
		7,500	0.12 (26/34)	0.17 (42/56)	0.21 (56/75)	0.10	0.45
	480-3-60	4,000	0.05 (32)	0.06 (55)	0.07 (80)	0.03	0.68
		5,000	0.07 (32)	0.08 (55)	0.10 (80)	0.05	0.65
		6,000	0.09 (32)	0.12 (55)	0.15 (80)	0.07	0.60
		7,200	0.11 (32)	0.15 (55)	0.20 (80)	0.09	0.48
		7,500	0.12 (32)	0.17 (55)	0.21 (80)	0.10	0.45
	575	4,000		0.07 (50)		0.03	0.68
		5,000		0.10 (50)		0.05	0.65
		6,000		0.15 (50)		0.07	0.60
		7,200		0.20 (50)		0.09	0.48
		7,500		0.21 (50)		0.10	0.45
020-028	208/230,575†-3-60	5,000	0.08 (26/34)	0.11 (42/56)	0.14 (56/75)	0.06	0.65
		6,000	0.09 (26/34)	0.12 (42/56)	0.15 (56/75)	0.07	0.60
		7,200	0.11 (26/34)	0.16 (42/56)	0.20 (56/75)	0.09	0.48
		9,000	0.15 (26/34)	0.19 (42/56)	0.24 (56/75)	0.11	0.30
		10,000	0.17 (26/34)	0.21 (42/56)	0.26 (56/75)	0.12	0.26
		11,250	0.20 (26/34)	0.24 (42/56)	0.29 (56/75)	0.14	0.24
	460-3-60	5,000	0.08 (32)	0.11 (55)	0.14 (80)	0.06	0.65
		6,000	0.09 (32)	0.12 (55)	0.15 (80)	0.07	0.60
		7,200	0.11 (32)	0.15 (55)	0.20 (80)	0.09	0.48
		9,000	0.15 (32)	0.19 (55)	0.24 (80)	0.11	0.30
		10,000	0.17 (32)	0.21 (55)	0.26 (80)	0.12	0.26
		11,250	0.20 (32)	0.24 (55)	0.29 (80)	0.14	0.24

LEGEND

FIOP — Factory-Installed Option

*The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should then be used in conjunction with the Fan Performance table to determine blower rpm, bhp, and watts

†There are no electric heaters available for 575-v units.

**The static pressure must be deducted from external static pressure. The result and the evaporator entering-air cfm should then be used with the Fan Performance table to determine blower rpm, bhp, and watts.

NOTES:

1. Heaters are rated at 208/240 v, 480 v, and 575 v

2. The factory-assembled horizontal adapter curb substantially improves 50TJ016-028 fan performance (by the amount of static pressure listed).

Performance data (cont)



FAN RPM AT MOTOR PULLEY SETTINGS* – 50TJ004-028

UNIT 50TJ	MOTOR PULLEY TURNS OPEN												
	0	½	1	1½	2	2½	3	3½	4	4½	5	5½	6
004†	1000	976	952	928	904	880	856	832	808	784	760	—	—
005†	1185	1150	1115	1080	1045	1010	975	940	905	870	835	—	—
006†	1300	1260	1220	1180	1140	1100	1060	1020	980	940	900	—	—
007**	1460	1420	1380	1345	1305	1265	1225	1185	1150	1110	1070	—	—
008**	840	815	790	765	740	715	690	665	635	615	590	—	—
008††	935	910	885	860	835	810	785	760	735	710	685	—	—
009**	935	910	885	860	835	810	785	760	735	710	685	—	—
012**	935	910	885	860	835	810	785	760	735	710	685	—	—
012†	1085	1060	1035	1010	985	960	935	910	885	860	835	—	—
014**	1080	1060	1035	1015	990	970	950	925	905	880	860	—	—
014†	1260	1220	1185	1155	1130	1100	1075	1045	1015	990	960	930	900
016, (208/230, 460 V)**	1526	1492	1459	1426	1393	1360	1326	1293	1260	1227	1194	—	—
016, (575 V)**	1161	1134	1108	1081	1055	1028	1002	975	949	922	896	—	—
020**	1251	1234	1217	1200	1183	1166	1149	1132	1115	1098	1081	1064	1047
024**	1494	1472	1451	1430	1408	1387	1366	1345	1323	1302	1281	1259	1238
028**			1536	1515	1493	1472	1451	1430	1408	1387	1366	1344	1323

*Approximate fan rpm shown.

†Indicates alternate motor and drive package

**Indicates standard motor and drive package.

††Indicates alternate drive package only.

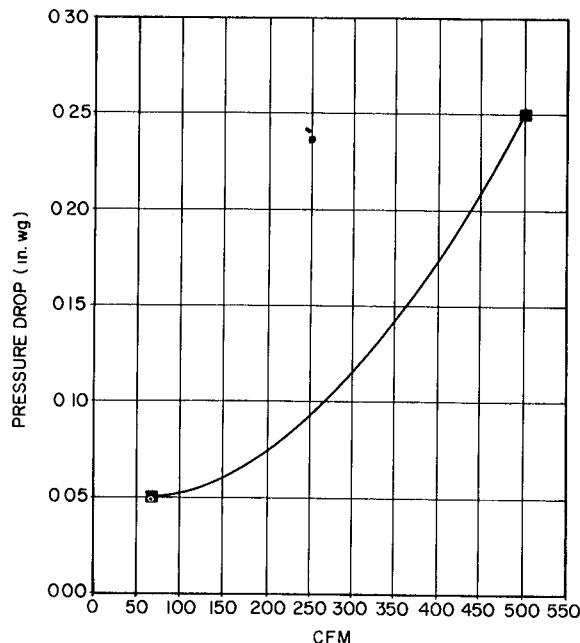
||Do not run this fan with the pulley set at less than 1 turn open, as it will exceed the maximum allowable rpm of 1550.

OUTDOOR SOUND POWER (Total Unit) – 50TJ004-014

UNIT 50TJ	SOUND RATING (Bels)	OCTAVE BANDS							
		63	125	250	500	1000	2000	4000	8000
004-006	8.2	56.8	75.8	72.4	72.9	74.8	75.4	71.3	69.1
007	8.4	56.0	69.8	72.9	75.9	78.3	76.5	72.6	67.9
008,009	8.6	83.2	87.4	83.5	82.8	83.0	77.7	71.8	67.0
012	8.8	97.6	90.4	85.7	84.8	83.9	77.5	71.3	65.8
014	8.8	83.7	87.2	83.4	82.8	83.0	77.7	71.8	67.0

Bels — Sound Levels (1 bel = 10 decibels)

ECONOMIZER/TWO-POSITION DAMPER BAROMETRIC RELIEF DAMPER CHARACTERISTICS – 50TJ004-014



EVAPORATOR-FAN MOTOR PERFORMANCE

UNIT 50TJ	EVAPORATOR-FAN MOTOR	UNIT VOLTAGE	MAXIMUM ACCEPTABLE CONTINUOUS BHP*	MAXIMUM ACCEPTABLE OPERATING WATTS	MAXIMUM AMP DRAW
004	Standard	208/230	0.34	440	2.9
		460			1.4
		575			1.4
	Alternate	208/230	1.00	1000	3.9
		460			2.3
		575			2.3
005	Standard	208/230	0.75	850	3.5
		460			1.8
		575			1.8
	Alternate	208/230	1.00	1000	3.9
		460			2.3
		575			2.3
006	Standard	208/230	1.20	1340	5.9
		460			3.2
		575			3.2
	Alternate	208/230	1.80	1921	8.9
		460			4.7
		575			4.7
007	Standard	208/230	2.40	2120	6.1
		460			2.7
		575			2.7
008	Standard	208/230	2.40	2120	6.1
		460			2.7
		575			2.7
009	Standard	208/230	2.40	2120	6.1
		460			2.7
		575			2.7
012	Standard	208/230	2.40	2120	6.1
		460			2.7
		575			2.7
	Alternate	208/230	2.90	2615	7.9
		460			3.6
		575			3.6
014	Standard	208/230	4.20	3775	12.6
		460			5.7
		575			5.7
	Alternate	208/230	4.90	4400	15.0
		460			7.4
		575			7.4
016	Standard	208/230	4.25	3775	10.5
		460			4.8
		575		3065	3.9
020	Standard	208/230	5.90	5180	15.8
		460			7.9
		575			6.0
024	Standard	208/230	8.70	7915	22.0
		460	9.50	8640	13.0
		575	8.70	7915	10.0
028	Standard	208/230	10.26	9510	28.0
		460	11.80	11,000	14.6
		575	10.26	9510	13.0

LEGEND

Bhp — Brake Horsepower

*Extensive motor and electrical testing on these units ensures that the full horsepower range of the motors can be utilized with confidence. Using your fan motors up to the horsepower ratings shown in this table will not result in nuisance tripping or premature motor failure. Unit warranty will not be affected.

Performance data (cont)



ELECTRIC HEATING CAPACITIES — 50TJ004-014

UNIT 50TJ	VOLTAGE (60 Hz)	ACCESSORY kW
004	208/230 (single phase)	4.4
		6.5
		8.7
		10.5
		13.0*
	208/230 (3 phase)	4.4
		6.5
		8.7
		10.5
005	208/230 (single phase)	6.0
		8.8
		11.5
		14.0
		17.4*
	208/230 (3 phase)	6.5
		8.7
		16.0
		21.0*
006	208/230 (single phase)	6.0
		11.5
		14.0*
		23.0*
		26.5*
	208/230 (3 phase)	6.5
		10.5
		16.0
		21.0*
007	208/230 (single phase)	6.0
		11.5
		14.0
		23.0*
		25.5*
	208/230 (3 phase)	6.5
		10.5
		16.0
		21.0*

ELECTRIC HEATING CAPACITIES — 50TJ004-014 (cont)

UNIT 50TJ	VOLTAGE (60 Hz)	ACCESSORY kW
008,009	208/230 (3 phase)	10.4
		16.0
		24.8
		32.0
		42.4*
	460 (3 phase)	13.9
012,014	208/230 (3 phase)	16.5
		27.8
		33.0
		41.7*
		50.0*
	460 (3 phase)	18.0
		36.0
		54.0*
		58.0*

*Two heater packages required to provide kW indicated.

NOTES:

- 1 The kW ratings shown above are at 240, 480, and 575 v. Use the Multiplication Factors table below to determine heater capacity for your particular voltage.
- 2 Heaters are not available for size 004-007, 575-v units.

MULTIPLICATION FACTORS — 50TJ004-014

HEATER kW RATING	VOLTAGE DISTRIBUTION V-3-60	MULTIPLICATION FACTOR
240	200	.69
	208	.75
	230	.92
	240	1.00
480	440	.84
	460	.92
	480	1.00

EXAMPLE: 32.0 kW (at 240 v) heater on 208 v
 = 32.0 (.75 mult factor)
 = 24.0 kW capacity at 208 v

ELECTRIC RESISTANCE HEATER DATA — 50TJ016-028

UNIT 50TJ	HEATER kW				HEATER STAGES	% HEAT PER STAGE	MAXIMUM STAGES*
	Unit Voltages						
	208	230	460	575			
016	26	34	32	—	2	50/50	2
	42	56	55	—	2	33/67	3
	56	75	80	50	2	50/50	4
020-028	26	34	32	—	2	50/50	2
	42	56	55	—	2	33/67	3
	56	75	80	—	2	50/50	4

*Maximum number of stages using accessory low-ambient kit or head pressure control device and low-ambient kit

NOTE: Heaters are rated at 208 v, 240 v, 480 v, and 575 v.

Electrical data — 50TJ004-007



UNIT 50TJ	NOMINAL V-PH-HZ	IFM TYPE	VOLTAGE RANGE		COMPR (each)		OFM		IFM	ELECTRIC HEAT*		POWER SUPPLY		DISCONNECT SIZE†	
			Min	Max	RLA	LRA	Hp	FLA		Nominal kW**	FLA	MCA	MOCP††	FLA	LRA
004 (3 Ton)	208/230-1-60	Std	187	254	16.9	86.7	¼	1.4	2.8	—	—	25.3/25.3	35/35	24/24	97/97
										3.3/ 4.4	15.9/18.3	25.3/26.4	35/35	24/24	97/97
										4.9/ 6.5	23.8/27.3	32.8/37.4	35/40	30/34	97/97
										6.5/ 8.7	31.4/36.2	42.8/48.8	45/50	39/45	97/97
	208/230-3-60	Std	187	254	11.7	65.1	¼	1.4	2.8	—	—	26.4/26.4	35/35	26/26	102/102
										3.3/ 4.4	15.9/18.3	26.4/27.8	35/35	26/26	102/102
										4.9/ 6.5	23.5/27.1	34.2/38.7	35/40	32/36	102/102
										6.5/ 8.7	31.4/36.3	44.1/50.2	45/60	41/46	102/102
	460-3-60	Std	414	508	5.1	32.8	¼	0.8	2.8	—	—	18.8/18.8	25/25	18/18	76/76
										3.3/ 4.4	9.2/10.6	18.8/18.8	25/25	18/18	76/76
										4.9/ 6.5	13.6/15.6	20.4/23.0	25/25	19/21	76/76
										6.5/ 8.7	18.1/20.9	26.2/29.7	30/30	24/27	76/76
005 (4 Ton)	208/230-1-60	Std	187	254	23.0	110	¼	1.4	3.5	—	—	33.7/ 33.7	40/ 40	32/ 32	122/122
										3.3/ 4.4	15.9/18.3	33.7/ 33.7	40/ 40	32/ 32	122/122
										6.5/ 8.7	31.4/36.3	43.6/ 49.7	45/ 50	40/ 46	122/122
										9.8/13.0	46.9/54.2	63.0/ 72.1	70/ 80	58/ 66	122/122
	208/230-3-60	Std	187	254	15.3	92.0	¼	1.4	3.5	—	—	24.0/24.0	30/30	24/24	116/116
										3.3/ 4.4	15.9/18.3	24.0/24.0	30/30	24/24	116/116
										4.9/ 6.5	13.6/15.6	27.0/30.5	30/35	27/30	116/116
										6.5/ 8.7	18.1/20.9	46.1/52.5	50/60	45/51	116/116
	460-3-60	Std	414	508	7.0	46.0	¼	0.8	1.8	—	—	11.4	15	11	52
										6.0	7.2	11.4	15	11	52
										11.5	13.8	19.5	20	18	52
										13.8	16.6	23.0	25	21	52
	575-3-60	Std	518	632	5.8	44.0	¼	0.8	1.8	—	—	9.3	15	9	49
										6.0	7.2	9.3	15	9	49
										11.5	13.8	19.9	20	18	54
										14.0	16.6	23.4	25	22	54

See legend and notes for electrical data table on page 48

Electrical data — 50TJ004-007 (cont)



UNIT 50TJ	NOMINAL V-PH-HZ	IFM TYPE	VOLTAGE RANGE		COMPR (each)		OFM		IFM	ELECTRIC HEAT*		POWER SUPPLY		DISCONNECT SIZE†	
			Min	Max	RLA	LRA	Hp	FLA		Nom kW**	FLA	MCA	MOCP††	FLA	LRA
006 (5 Ton)	208/230-1-60	Std	187	254	28 3	141	¼	1.4	5 9	—	—	42 7/ 42 7	50/ 50	41/ 41	155/155
										4.9/ 6 5	23 5/27 1	42 7/ 42 7	50/ 50	41/ 41	155/155
		Alt	187	254	28 3	141	¼	1.4	8 5	6 5/ 8 7	31 4/36 3	46 6/ 52 7	50/ 60	43/ 49	155/155
										9 8/13 0	46 9/54 2	66 0/ 75 1	70/ 80	61/ 69	155/155
	208/230-3-60	Std	187	254	17 7	110	¼	1 4	5 9	13 0/17 4	62 8/72 5	85 9/ 98.0	90/100	79/ 90	155/155
										15.8/21 0	75 8/87 5	102 2/116 8	110/125	94/107	155/155
		Alt	187	254	17 7	110	¼	1 4	8 5	4 9/ 6 5	23 5/27 1	45 3/ 45 3	60/ 60	44/ 44	169/169
										6 5/ 8 7	31 4/36 3	49 9/ 55 9	60/ 60	46/ 52	169/169
	460-3-60	Std	414	508	8 6	55	¼	0 8	3 2	9 8/13 0	46 9/54 2	69 3/ 78 3	70/ 80	64/ 72	169/169
										13 0/17 4	62 8/72 5	89 2/101 3	90/110	82/ 93	169/169
		Alt	414	508	8 6	55	¼	0 8	4 5	15 8/21 0	43 8/50 5	65 3/73 8	70/ 80	60/68	138/138
										19 9/26 5	55 2/63 8	79 7/90 3	80/90	73/83	138/138
	575-3-60	Std	518	632	7 1	50 0	¼	0 8	3 2	—	—	14 8	20	15	63
										6 0	7 2	14 8	20	15	63
		Alt	518	632	7 1	50 0	¼	0 8	4 5	11 5	13 8	21.3	25	20	63
										14 0	16 8	25 0	30	23	63
007 (6 Ton)	208/230-3-60	Std	187	254	22 3	146	¼	1 4	5 8	23 0	27 7	38 6	40	36	63
										25 0	30 1	41 6	45	38	63
		Alt	187	254	22 3	146	¼	1 4	5 8	6 0	7 2	16 1	20	16	70
										11 5	13 8	22 9	25	21	70
	460-3-60	Std	414	508	11 2	73 0	¼	0 8	2 6	14 0	16 8	24 3	25	22	95
										23 0	27 8	37 8	40	35	95
		Alt	414	508	11 2	73 0	¼	0 8	2 6	25 5	30 7	41 6	45	38	95
										—	—	13 8	15	13	80
	575-3-60	Std	518	632	8 9	62 0	¼	0 8	2 6	—	—	17 4	20	17	95
										6 0	7 2	17 4	20	17	95
		Alt	518	632	8 9	62 0	¼	0 8	2 6	11 5	13 8	20 5	25	19	95
										14 0	16 8	24 3	25	22	95

LEGEND AND NOTES FOR ELECTRICAL DATA TABLES PAGES 47-51

- LEGEND**
- CSA — Canadian Standards Association
 - FLA — Full Load Amps
 - HACR — Heating, Air Conditioning and Refrigeration
 - IFM — Indoor (Evaporator) Fan Motor
 - LRA — Locked Rotor Amps
 - MCA — Minimum Circuit Amps
 - MOCP — Maximum Overcurrent Protection
 - NEC — National Electrical Code
 - OFM — Outdoor (Condenser) Fan Motor
 - RLA — Rated Load Amps

*Heater capacity (kW) is based on heater voltage of 208 v, 240 v, 480 v, and 575 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly.

†Used to determine minimum disconnect size per NEC

**Heaters are field installed only

††Fuse or HACR circuit breaker

||Fusing in single point box provides the required branch circuit protection

NOTES:

1 In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. The CSA units may be fuse or circuit breaker.

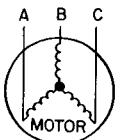
2 Unbalanced 3-Phase Supply Voltage

Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

EXAMPLE: Supply voltage is 460-3-60

$$\begin{aligned} \text{AB} &= 452 \text{ v} \\ \text{BC} &= 464 \text{ v} \\ \text{AC} &= 455 \text{ v} \\ \text{Average Voltage} &= \frac{452 + 464 + 455}{3} \\ &= \frac{1371}{3} \\ &= 457 \end{aligned}$$



Determine maximum deviation from average voltage

(AB) 457 — 452 = 5 v

(BC) 464 — 457 = 7 v

(AC) 457 — 455 = 2 v

Maximum deviation is 7 v.

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{7}{457} \\ &= 1.53\% \end{aligned}$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

3 MCA calculation for 50TJ016-028 units with electric heaters over 50 kW = (1 25 x IFM amps) + (1 00 x heater FLA)



016-028 only



004-014 only



004-014 Only

Warnock Hersey



016-028 Only

Electrical data — 50TJ008-014



UNIT 50TJ	NOMINAL VOLTAGE	IFM	VOLTAGE RANGE		COMPR (ea)		OFM		IFM	ELECTRIC HEAT*		POWER SUPPLY		DISCONNECT SIZE†	
			Min	Max	RLA	LRA	Hp	FLA		Nom kW**	FLA	MCA	MOCPT†	FLA	LRA
008 (7½ Tons)	208/230-3-60	Std	187	254	13.6	73.4	¾	3.8	5.8	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.9/42.4	— 21.7/ 25.0 33.4/ 38.5 51.7/ 59.7 66.7/ 74.2 88.4/102.0	40.2/ 40.2 40.2/ 40.2 48.9/ 55.4 71.9/ 81.8 90.6/103.5 117.8/134.8	45/ 45 45/ 45 50/ 60 80/ 90 100/110 125/150	42/ 42 42/ 42 45/ 51 66/ 75 83/ 95 108/124	206/206 206/206 206/206 206/206 206/206 206/206
	460-3-60	Std	414	508	6.2	37.7	¾	1.9	2.6	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	18.5 24.1 28.1 45.0 52.9 65.9	20 25 30 50 60 70	19 22 26 41 49 61	105 105 105 105 105 105
	575-3-60	Std	518	632	5.8	40.0	¾	1.9	2.6	— 18.0 36.0	— 17.0 34.0	16.7 23.8 45.1	20 25 50	17 22 41	104 104 104
009 (8½ Tons)	208/230-3-60	Std	187	254	15.8	92.0	¾	3.8	5.8	— 7.8/10.4 12.0/16.0 18.6/24.8 24.0/32.0 31.8/42.4	— 21.7/ 25.0 33.4/ 38.5 51.7/ 59.7 66.7/ 77.0 88.4/102.0	45.2/ 45.2 45.2/ 45.2 48.9/ 55.4 71.9/ 81.8 90.6/103.5 117.7/134.8	50/ 50 50/ 50 50/ 60 80/ 90 100/110 125/150	47/ 47 47/ 47 47/ 51 66/ 75 83/ 95 108/124	243/243 243/243 243/243 243/243 243/243 243/243
	460-3-60	Std	414	508	7.4	46.0	¾	1.9	2.6	— 13.9 16.5 27.8 33.0 41.7	— 16.7 19.8 33.4 39.7 50.2	21.0 24.1 28.1 45.0 52.9 65.9	25 25 30 50 60 70	22 22 26 41 49 61	122 122 122 122 122 122
	575-3-60	Std	518	632	5.9	44.0	¾	1.9	2.6	— 18.0 36.0	— 17.0 34.0	16.8 23.8 45.1	20 25 50	18 22 42	112 112 112
012 (10 Tons)	208/230-3-60	Std	187	254	17.9	110	¾	3.8	5.8	— 7.8/10.4 12.0/16.0 24.0/32.0 31.8/42.4 37.5/50.0	— 21.7/ 25.0 33.4/ 38.5 51.7/ 59.7 66.7/ 77.0 88.4/102.0 104.2/120.3	49.5/ 49.5 49.5/ 49.5 49.5/ 55.4 90.6/103.5 117.7/134.8 137.5/127.5	60/ 60 60/ 60 60/ 60 100/110 125/150 150/150	52/ 52 52/ 52 52/ 52 83/ 95 108/124 127/145	279/279 279/279 279/279 279/279 279/279 279/279
		Alt							7.5	— 7.8/10.4 12.0/16.0 24.0/32.0 31.8/42.4 37.5/50.0	— 21.7/ 25.0 33.4/ 38.5 51.7/ 59.7 66.7/ 77.0 88.4/102.0 104.2/120.3	51.2/ 51.2 51.2/ 51.2 51.2/ 57.5 92.8/105.6 119.9/136.9 139.7/129.7	60/ 60 60/ 60 60/ 60 100/110 125/150 150/150	54/ 54 54/ 54 54/ 54 85/ 97 110/126 129/147	298/298 298/298 298/298 298/298 298/298 298/298
	460-3-60	Std	414	508	8.6	55.0	¾	1.9	2.6	— 16.5 27.8 33.0 41.7 60.0	— 19.8 33.4 39.7 50.2 60.1	23.9 28.1 45.0 52.9 65.9 63.4	30 30 50 60 70 70	25 26 41 49 61 72	140 140 140 140 140 140
		Alt							3.4	— 16.5 27.8 33.0 41.7 50.0	— 19.8 33.4 39.7 50.2 60.1	24.7 29.1 46.0 53.9 66.9 64.4	30 30 50 60 70 70	26 27 42 50 62 73	149 149 149 149 149 149
	575-3-60	Std	518	632	6.4	50.0	¾	1.9	2.6	— 18.0 36.0 54.0	— 17.0 34.0 51.0	18.0 23.8 45.1 53.6	25 25 50 60	19 22 42 61	112 112 112 112
		Alt							3.4	— 18.0 36.0 54.0	— 17.0 34.0 51.0	18.6 24.6 45.9 54.4	25 25 50 60	20 23 42 62	119 119 119 119

Electrical data — 50TJ008-014 (cont)



UNIT 50TJ	NOMINAL VOLTAGE	IFM	VOLTAGE RANGE		COMPR (ea)		OFM		IFM	ELECTRIC HEAT*		POWER SUPPLY		DISCONNECT SIZE†	
			Min	Max	RLA	LRA	Hp	FLA		Nom kW**	FLA	MCA	MOCP††	FLA	LRA
014 (12½ Tons)	208/230-3-60	Std	187	254	22.9, 21.6¶	146.0	¾	3.8	12.0	7.8/10.4	21.7/ 25.0	66.0/ 66.0	80/ 80	69/ 69	394/394
										12.0/16.0	33.4/ 38.1	66.0/ 66.0	80/ 80	69/ 69	394/394
										24.0/32.0	66.7/ 74.2	98.4/111.2	100/125	91/102	394/394
		Alt	187	254	22.9, 21.6¶	146.0	¾	3.8	15.0	31.8/42.4	88.4/102.0	125.5/142.5	150/150	115/131	394/394
										37.5/50.0	104.2/120.3	145.3/135.3	150/150	134/152	394/394
										—	—	69.0/ 69.0	80/ 80	73/ 73	418/418
	460-3-60	Std	414	508	11.9	73.0	¾	1.9	5.4	7.8/10.4	21.7/ 25.0	69.0/ 69.0	80/ 80	73/ 73	418/418
										12.0/16.0	33.4/ 38.1	69.0/ 69.0	80/ 80	73/ 73	418/418
										24.0/32.0	66.7/ 74.2	102.1/115.0	110/125	94/106	418/418
		Alt	414	508	11.9	73.0	¾	1.9	7.4	31.8/42.4	88.4/102.0	129.2/146.3	150/150	119/135	418/418
										37.5/50.0	104.2/120.3	149.0/139.0	150/175	137/156	418/418
										—	—	69.0/ 69.0	80/ 80	73/ 73	418/418
	575-3-60	Std	518	632	9.5	62.0	¾	1.9	5.4	16.5	19.8	34.1	40	36	197
										27.8	33.4	48.5	50	45	197
										33.0	39.7	56.4	60	52	197
		Alt	518	632	9.5	62.0	¾	1.9	7.4	41.7	50.2	69.4	70	64	197
										50.0	60.1	66.9	80	75	197
										—	—	36.1	40	38	209
	575-3-60	Std	518	632	9.5	62.0	¾	1.9	5.4	16.5	19.8	36.1	40	38	209
										27.8	33.4	51.2	60	47	209
										33.0	39.7	59.0	60	54	209
		Alt	518	632	9.5	62.0	¾	1.9	7.4	41.7	50.2	72.1	80	66	209
										50.0	60.1	69.5	80	78	209
										—	—	27.2	35	29	165
	575-3-60	Std	518	632	9.5	62.0	¾	1.9	5.4	18.0	17.0	27.2	35	29	165
										36.0	34.0	47.9	50	45	165
										54.0	51.0	56.4	70	65	165
		Alt	518	632	9.5	62.0	¾	1.9	7.4	18.0	17.0	28.9	35	31	174
										36.0	34.0	30.6	35	31	174
										54.0	51.0	51.8	60	48	174
	575-3-60	Std	518	632	9.5	62.0	¾	1.9	5.4	18.0	17.0	27.2	35	29	165
										36.0	34.0	47.9	50	45	165
										54.0	51.0	56.4	70	65	165
		Alt	518	632	9.5	62.0	¾	1.9	7.4	18.0	17.0	28.9	35	31	174
										36.0	34.0	30.6	35	31	174
										54.0	51.0	51.8	60	48	174

LEGEND AND NOTES FOR ELECTRICAL DATA TABLES PAGES 47-51

- LEGEND**
- CSA — Canadian Standards Association
 - FLA — Full Load Amps
 - HACR — Heating, Air Conditioning and Refrigeration
 - IFM — Indoor (Evaporator) Fan Motor
 - LRA — Locked Rotor Amps
 - MCA — Minimum Circuit Amps
 - MOCP — Maximum Overcurrent Protection
 - NEC — National Electrical Code
 - OFM — Outdoor (Condenser) Fan Motor
 - RLA — Rated Load Amps

*Heater capacity (kW) is based on heater voltage of 208 v, 240 v, 480 v, and 575 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly.

†Used to determine minimum disconnect size per NEC.

**Heaters are field installed only.

††Fuse or HACR circuit breaker.

¶Fusing in single point box provides the required branch circuit protection.

¶Circuit 1, Circuit 2

NOTES:

- In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. The CSA units may be fuse or circuit breaker.

2 Unbalanced 3-Phase Supply Voltage

Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent of voltage imbalance

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

EXAMPLE: Supply voltage is 460-3-60.

AB = 452 v

BC = 464 v

AC = 455 v

$$\text{Average Voltage} = \frac{452 + 464 + 455}{3}$$

$$= \frac{1371}{3}$$

$$= 457$$

Determine maximum deviation from average voltage.

(AB) 457 - 452 = 5 v

(BC) 464 - 457 = 7 v

(AC) 457 - 455 = 2 v

Maximum deviation is 7 v.

Determine percent of voltage imbalance

$$\% \text{ Voltage Imbalance} = 100 \times \frac{7}{457} = 1.53\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

- MCA calculation for 50TJ016-028 units with electric heaters over 50 kW = (1.25 x IFM amps) + (1.00 x heater FLA)



016-028 only



004-014 only



004-014 Only

Warnock Hersey



016-028 Only

Electrical data — 50TJ016-028



UNIT 50TJ	NOMINAL VOLTAGE (60 Hz)	IFM TYPE	VOLTAGE RANGE		COMPRESSOR				OFM			IFM		ELECTRIC HEAT*		POWER SUPPLY	
					No. 1		No. 2										
			Min	Max	RLA	LRA	RLA	LRA	Quantity	Hp	FLA (ea)	Hp	FLA	Nom kW	FLA	MCA	MOCPT†
016 (15 Tons)	208/230 (3 phase)	Std	187	254	61.6	266	—	—	2	1	5.4	3.7	12.0/12.0	26/34 42/56 56/75**	72/ 82 117/135 156/180	99/ 99 105/118 161/150 171/195	150/150 150/150 175/150 175/200
	460 (3 phase)	Std	414	508	28.6	120	—	—	2	1	2.7	3.7	5.4	32 55 80**	39 66 96	47 56 73 103	70 70 80 110
	575 (3 phase)	Std	518	632	23.7	96	—	—	2	1	2.6	3	3.8	50	50	39 68	60 70
020 (18 Tons)	208/230 (3 phase)	Std	187	254	34.5	239	28.3	205	2	1	5.5	5	16.7/15.2	26/34 42/56 56/75**	72/ 82 117/135 156/180	99/ 98 111/122 167/154 177/199	125/125 125/125 175/175 200/200
	460 (3 phase)	Std	414	508	17	119	14.4	104	2	1	2.8	5	7.6	32 55 80**	39 66 96	49 58 76 106	60 60 80 110
	575 (3 phase)	Std	518	632	15.2	111	11.4	78.4	2	1	3.4	5	6.1	—	—	43	50
024 (20 Tons)	208/230 (3 phase)	Std	187	254	34.5	239	28.3	205	2	1	5.5	7½††	24.2/22.0	26/34 42/56 56/75**	72/ 82 117/135 156/180	107/107 120/130 177/163 186/208	125/125 125/150 200/175 200/225
	460 (3 phase)	Std	414	508	17	119	14.4	104	2	1	2.8	7½††	11.0	32 55 80**	39 66 96	52 63 80 110	60 70 90 110
	575 (3 phase)	Std	518	632	15.2	111	11.4	78.4	2	1	3.4	7½††	9.0	—	—	46	60
028 (25 Tons)	208/230 (3 Phase)	Std	187	254	43.6	228	43.6	228	2	1	5.5	10	30.8/28.0	26/34 42/56 56/75**	72/ 82 117/135 156/180	140/137 140/138 185/170 195/215	175/175 175/175 200/175 225/225
	460 (3 phase)	Std	414	508	22.1	114	22.1	114	2	1	2.8	10	14.0	32 55 80**	39 66 96	69 69 83 113	90 90 90 125
	575 (3 phase)	Std	518	632	17.9	91	17.9	91	2	1	3.4	10	11.0	—	—	58	70

LEGEND AND NOTES FOR ELECTRICAL DATA TABLES PAGES 47-51

LEGEND

- CSA — Canadian Standards Association
- FLA — Full Load Amps
- HACR — Heating, Air Conditioning and Refrigeration
- IFM — Indoor (Evaporator) Fan Motor
- LRA — Locked Rotor Amps
- MCA — Minimum Circuit Amps
- MOCPT — Maximum Overcurrent Protection
- NEC — National Electrical Code
- OFM — Outdoor (Condenser) Fan Motor
- RLA — Rated Load Amps

*Heater capacity (kW) is based on heater voltage of 208 v, 240 v, 480 v, and 575 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly.

†Used to determine minimum disconnect size per NEC.

**Heaters are field installed only.

††Fuse or HACR circuit breaker

||Fusing in single point box provides the required branch circuit protection

NOTES:

- In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. The CSA units may be fuse or circuit breaker.

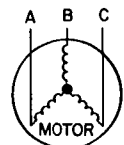
2 Unbalanced 3-Phase Supply Voltage

Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent of voltage imbalance

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

EXAMPLE: Supply voltage is 460-3-60

$$\begin{aligned} & \text{AB} = 452 \text{ v} \\ & \text{BC} = 464 \text{ v} \\ & \text{AC} = 455 \text{ v} \\ & \text{Average Voltage} = \frac{452 + 464 + 455}{3} \\ & = \frac{1371}{3} \\ & = 457 \end{aligned}$$



Determine maximum deviation from average voltage

(AB) 457 — 452 = 5 v

(BC) 464 — 457 = 7 v

(AC) 457 — 455 = 2 v

Maximum deviation is 7 v

Determine percent of voltage imbalance.

$$\begin{aligned} \% \text{ Voltage Imbalance} &= 100 \times \frac{7}{457} \\ &= 1.53\% \end{aligned}$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately

- MCA calculation for 50TJ016-028 units with electric heaters over 50 kW = (1.25 x IFM amps) + (1.00 x heater FLA)



016-028 only



004-014 only



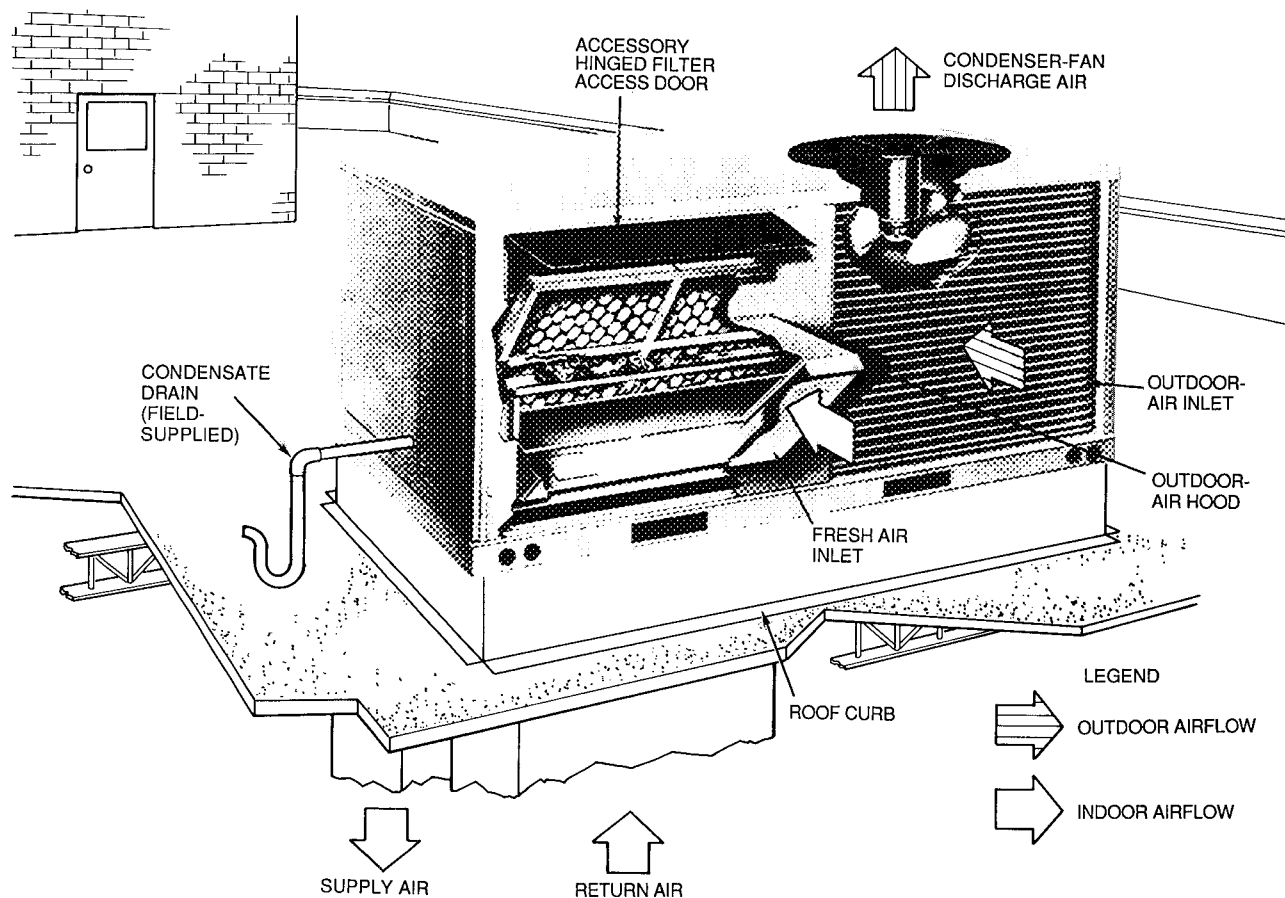
004-014 Only

Warnock Hersey

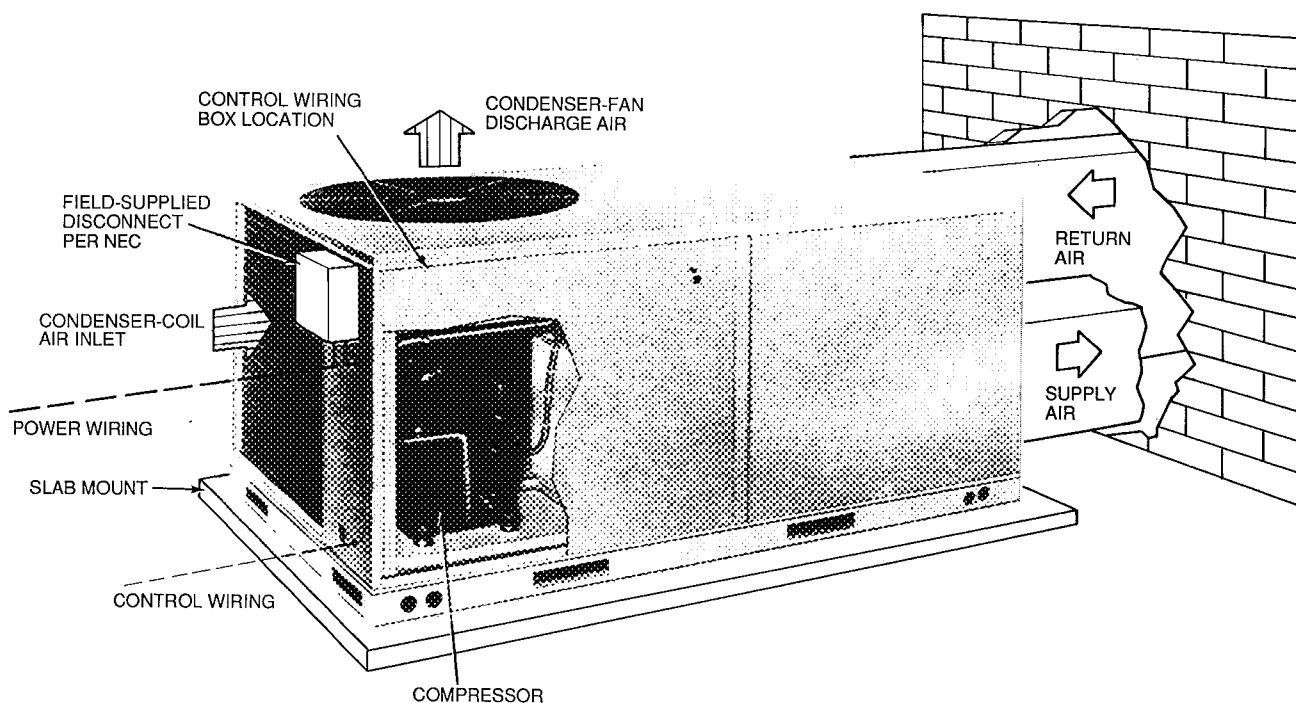


016-028 Only

VERTICAL DISCHARGE DUCTING



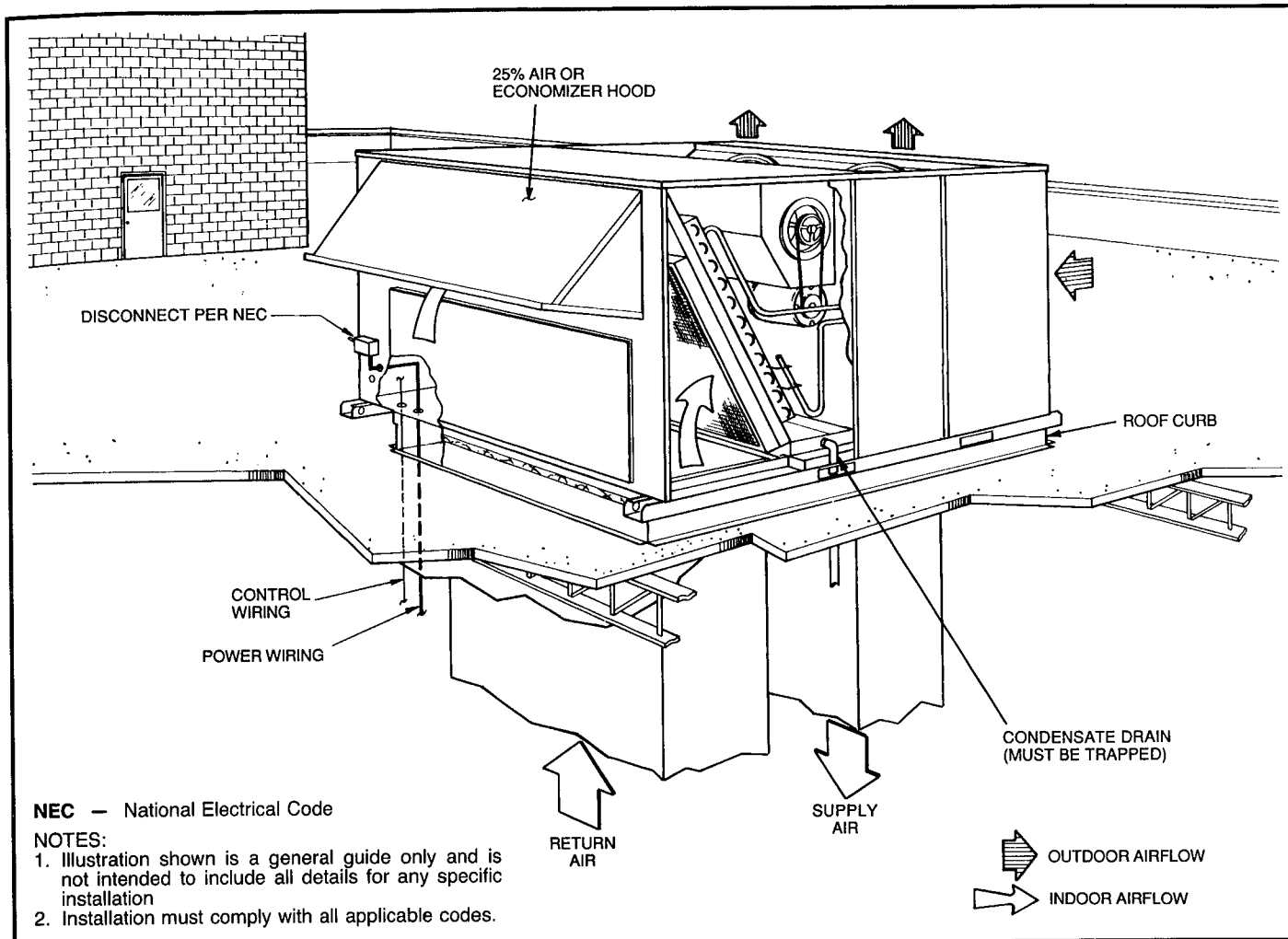
HORIZONTAL DISCHARGE DUCTING



NEC — National Electrical Code

Typical piping and wiring — 50TJ016-028

Carrier®



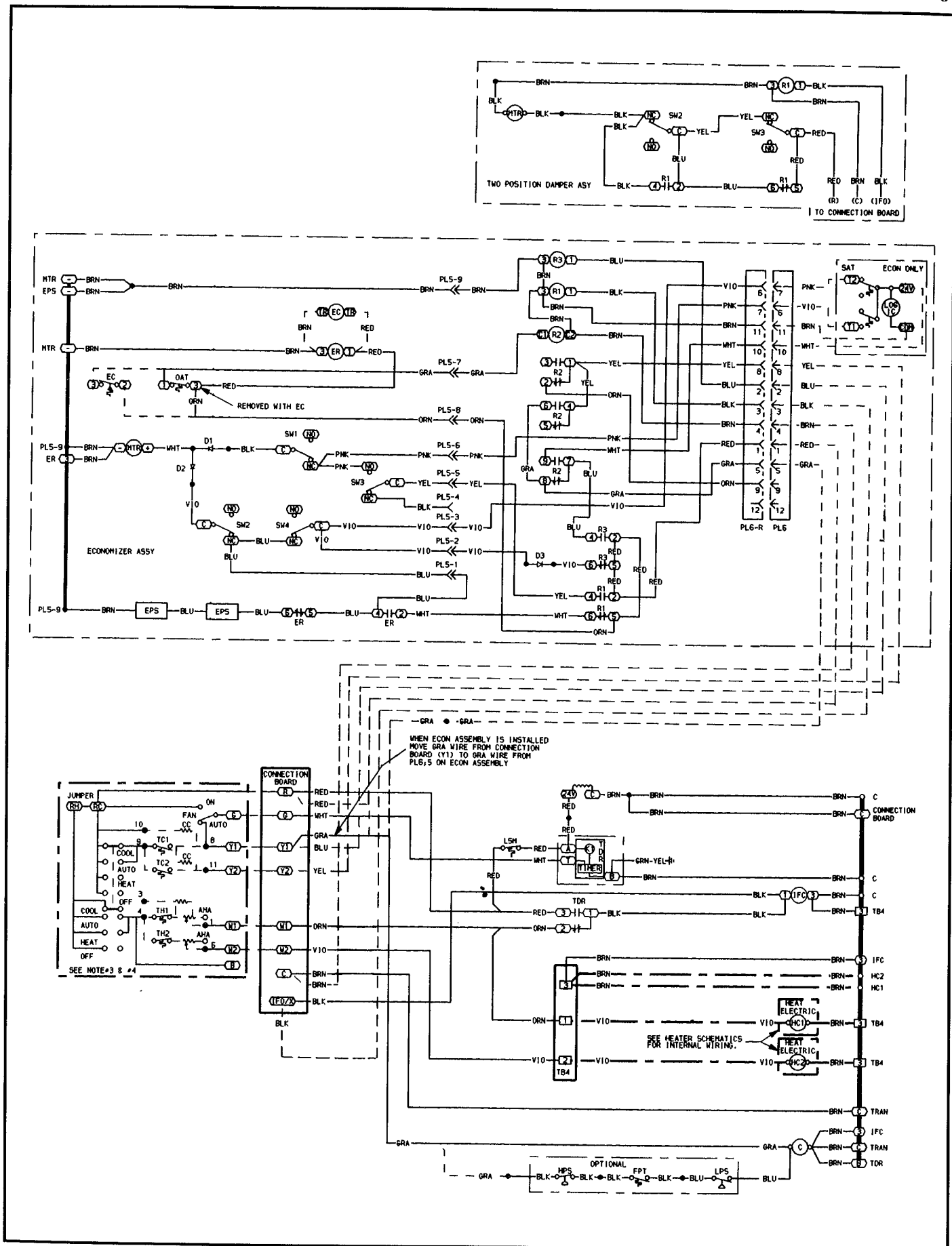
LEGEND FOR TYPICAL CONTROL WIRING SCHEMATICS

AHA — Adjustable Heat Anticipator
BRK W/AT — Breaks With Amp Turns
C — Contactor, Compressor
CB — Circuit Breaker
CC — Cooling Compensator
CH — Crankcase Heater
CLO — Compressor Lockout
CLS — Compressor Lockout Switch
COMP — Compressor Motor
CT — Current Transformer
DM — Damper Motor
DU — Dummy Terminal
EC — Enthalpy Control
EQUIP — Equipment
FL — Fuse Link
FPT — Freeze Protection Thermostat
FU — Fuse
GND — Ground
HC — Heater Contactor
HPS — High-Pressure Switch
HTR — Heater
IFC — Indoor-Fan Contactor
IFCB — Indoor-Fan Circuit Breaker

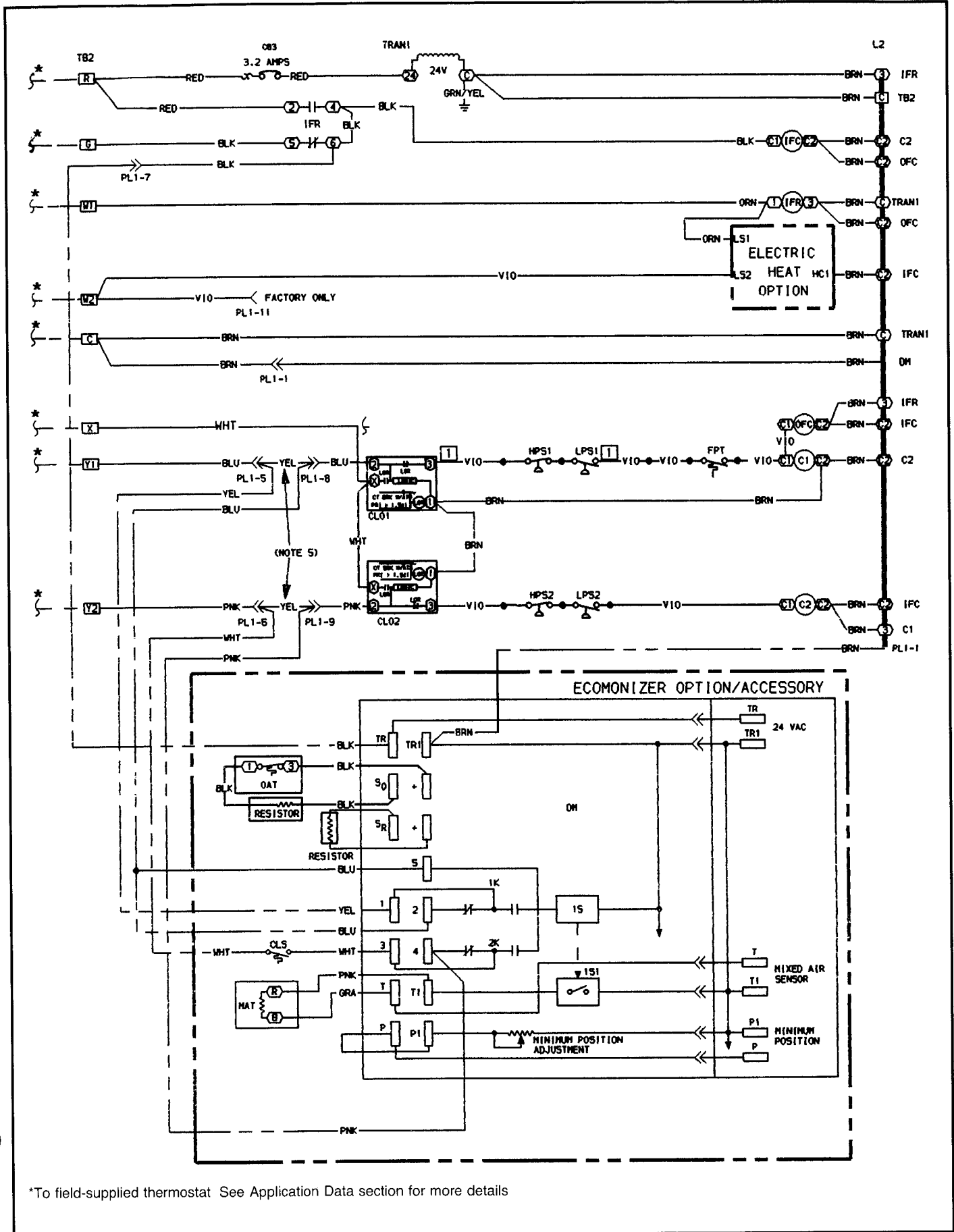
IFM — Indoor-Fan Motor
IFR — Indoor-Fan Relay
IP — Internal Protector
L — Light
LOR — Lockout Relay
LPS — Low-Pressure Switch
LS — Limit Switch
MAT — Mixed-Air Thermostat
NC — Normally Closed
NO — Normally Open
OAT — Outdoor-Air Thermostat
OFC — Outdoor-Fan Contactor
OFM — Outdoor-Fan Motor
OP — Overcurrent Protector
PL — Plug Assembly
PRI — Primary
QT — Quadruple Terminal
SW — Switch
TB — Terminal Block
TC — Thermostat Cooling
TH — Thermostat Heating
TRAN — Transformer

Terminal (Marked)
 Terminal (Unmarked)
 Terminal Block
 Splice
 Splice (Marked)
 Factory Wiring
 Field Control Wiring
 Field Power Wiring
 Accessory Wiring or Optional Wiring
 Accessory
 To indicate common potential only, not to represent wiring

Typical wiring schematic — 50TJ004-014



Typical wiring schematic — 50TJ016-028



*To field-supplied thermostat See Application Data section for more details

Operating sequence

Cooling, units without economizer — When thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC), and compressor contactor no. 1 (C1) are energized and evaporator-fan motor, compressor no. 1 (50TJ004-014 and 020-028) or unloaded compressor (50TJ016), and condenser fans start. The condenser-fan motor runs continuously while unit is cooling. On 50TJ008-028 units, if the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts (50TJ008-014 and 020-028), or compressor no. 1 runs fully loaded (50TJ016).

Heating, units without economizer (If Accessory or Optional Heater is Installed) — Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2.

Cooling, units with economizer (50TJ004-014) — When the outdoor-air temperature is above the outdoor-air thermostat (OAT) setting and the room thermostat calls for cooling, compressor contactor no. 1 is energized to start compressor no. 1 and the condenser-fan motor. The evaporator-fan motor is energized and the economizer damper moves to the minimum position. Upon a further call for cooling, compressor contactor no. 2 will be energized (50TJ008-014), starting compressor no. 2. After the thermostat is satisfied, the damper moves to the fully closed position.

When the outdoor-air temperature is below the OAT setting and the thermostat calls for cooling, the economizer dampers move to the minimum position. If the supply-air temperature is above 57 F, the damper continues to open until it reaches the fully open position or until the supply-air temperature drops below 57 F.

When the supply-air temperature falls to between 57 F and 52 F, the damper will remain at an intermediate open position. If the supply-air temperature falls below 52 F, the damper will modulate closed until it reaches the minimum position or until the supply-air temperature is above 52 F. When the thermostat is satisfied, the damper will move to the fully closed position.

If the outdoor air alone cannot satisfy the cooling requirements of the conditioned space, economizer cooling is integrated with mechanical cooling, providing second-stage cooling. Compressor no. 1 and the condenser fan will be energized and the position of the economizer damper will be determined by the supply-air temperature. Compressor no. 2 (50TJ008-014) is locked out

When the second stage of cooling is satisfied, the compressor and condenser-fan motor will be deenergized. The damper position will be determined by the supply-air temperature.

When the first stage of cooling is satisfied, the damper will move to fully closed position.

Cooling, units with economizer (50TJ016-028) — Upon a call for cooling, when outdoor ambient temperature is above the temperature control setting, the evaporator and condenser fans and compressor energize. The economizer damper moves to VENT position.

Upon a first-stage call for cooling, when outdoor ambient temperature is below the temperature control setting, the evaporator fan starts and economizer damper modulates to maintain mixed-air temperature. The compressor(s) remains off.

Upon a second-stage call for cooling, compressor no. 1 (50TJ020-028) or unloaded compressor (50TJ016) is energized and mechanical cooling is integrated with economizer cooling. Compressor no. 2 is locked out. If the air temperature is below 50 F, a cooling lockout switch prevents the compressor(s) from running.

When supply-air temperature drops below a fixed set point, the economizer damper modulates to maintain the temperature at the fixed set point.

A freeze protection thermostat (FPT) is located on the evaporator coil. It detects frost build-up and turns off the compressor, allowing the coil to clear. Once frost has melted, the compressor can be reenergized.

Heating, units with economizer (50TJ004-014) (If Accessory or Optional Heater is Installed) — When the room thermostat calls for heat through terminal W1, the evaporator-fan contactor and heater contactor no. 1 are energized. On units equipped for 2 stages of heat, when additional heat is needed, heater contactor no. 2 is energized through W2. The economizer damper moves to the minimum position during heating. When the thermostat is satisfied, the damper moves to the fully closed position.

Heating, units with economizer (50TJ016-028) (If Accessory or Optional Heater is Installed) — The outdoor air damper stays at VENT position while the evaporator fan is operating. Refer to Heating, Units Without Economizer section, above, for remainder of operating sequence.

Application data



Outdoor installation — Units approved for outdoor installation only.

Ductwork (50TJ004-014) — Secure vertical discharge ductwork to roof curb. For horizontal discharge applications, either attach ductwork to unit, or use field-supplied flanges attached to the horizontal discharge openings and attach all ductwork to flanges.

Ductwork (50TJ016-028) — Ductwork should be attached to the curb on all units. Interior installation may proceed before unit is set in place on roof. If ductwork is to be attached to unit, do not drill in condensate drain pan area — leaks may result. Field-fabricated concentric ductwork may be connected as shown on page 58.

Horizontal discharge (50TJ004-014) — To convert from vertical discharge to horizontal discharge:

1. Remove economizer or two-position damper to gain access to return duct opening.
2. Move the horizontal-discharge duct opening covers to the vertical discharge openings.
3. Rotate economizer or two-position damper 90 degrees (until the economizer motor faces the condenser section).
4. Rotate the barometric relief damper 90 degrees.
5. Install block-off plate over the opening on the access panel.

IMPORTANT: On 50TJ004-014 horizontal applications equipped with economizer, the air filters **MUST** be installed external to the unit or economizer will have to be partially removed.

Thru-the-curb service connections — Roof curb connections allow field power wires and control wires to enter through the roof curb opening.

Thermostat — Use of 2-stage heating and cooling thermostat is recommended for all units. A 2-stage cooling thermostat is required on units with accessory economizer to provide integrated cooling.

Heating-to-cooling changeover — All units are automatic changeover from heating to cooling when automatic changeover thermostat and subbase are used.

Airflow — Units are draw-thru on cooling and blow-thru on heating.

Maximum airflow — To minimize the possibility of condensate blow-off from evaporator, airflow through units should not exceed 500 cfm/ton on 004-024 units and 11,250 cfm on 028 units.

Minimum airflow — For cooling, minimum airflow is 300 cfm/ton. For 004-014 units with electric heating, required minimum cfm is 900 for 50TJ004; 1200 for 50TJ005; 1500 for 50TJ006; 1800 for 50TJ007; 2250 for 50TJ008; 2550 for 50TJ009; and 3000 for 50TJ012 and 014, with the following exceptions:

UNIT 50TJ	UNIT VOLTAGE	HEATER KW	UNIT CONFIGURATION	REQUIRED MINIMUM CFM
012, 014	208/230	42.4	Horizontal	3200
	208/230	50.0	Horizontal	3200
	460	50.0	Horizontal or Vertical	3200
008- 014	575	18.0	Horizontal or Vertical	2800
		36.0		2350

NOTE: For 016-028 units with electric heating, the required minimum cfm is 300 cfm/ton.

Minimum ambient cooling operating temperature (50TJ004-014) — The minimum temperature for size 004-014 standard units is 25 F. With accessory Motormaster® control (for unit sizes 004-007) or Motormaster II control (for unit sizes 004-014), units can operate at outdoor temperatures down to -20 F.

Minimum ambient cooling operation temperature (50TJ016-028) — Units are designed to operate at outdoor temperatures down to 40 F for 50TJ016, 25 F for 50TJ020 and 024, and 48 F for 50TJ028. To operate at lower outdoor temperatures, see Minimum-Ambient Temperature Cooling Operation table on page 58 for operating limits.

Internal unit design — Due to Carrier's internal unit design (draw-thru over the motor), air path, and specially designed motors, the full horsepower (maximum continuous bhp) listed in the Physical Data table and the notes following each Fan Performance table can be utilized with confidence.

Using Carrier motors with the values listed in the Physical and Fan Performance Data tables *will not* result in nuisance tripping or premature motor failure. The unit warranty will not be affected.

Application data (cont)

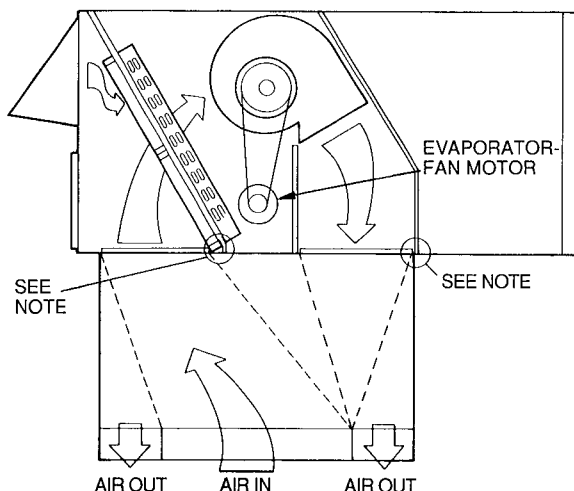


MINIMUM-AMBIENT TEMPERATURE COOLING OPERATION

UNIT 50TJ	OUTDOOR COOLING TEMPERATURE (F)			
	Base Unit	With Accessory 25 F Low-Ambient Kit	With Accessory 25 F Low-Ambient Kit and Motormaster® Head Pressure Control	With Motormaster III Head Pressure Control and 2 Accessory Winter Start Time-Delay Relay Kits
016	40	25	-20	—
020,024	25	—	—	-20
028	48	25*	—	-20

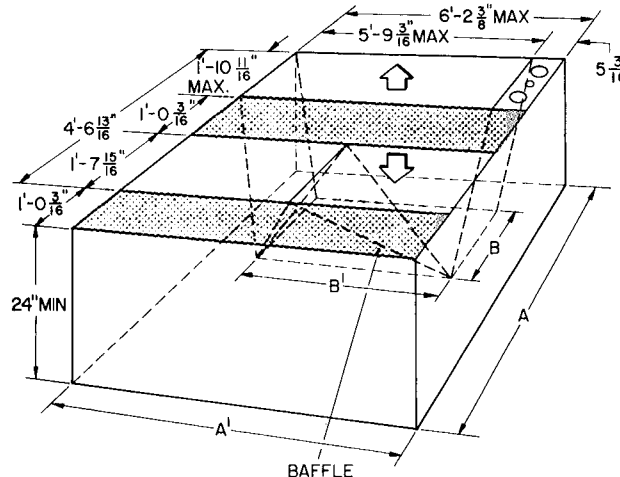
*Also need 1 accessory winter start time-delay relay kit

CONCENTRIC DUCT AIR DISTRIBUTION (50TJ016-028 ONLY)



NOTE: Do not drill in this area, damage to basepan may result in water leak

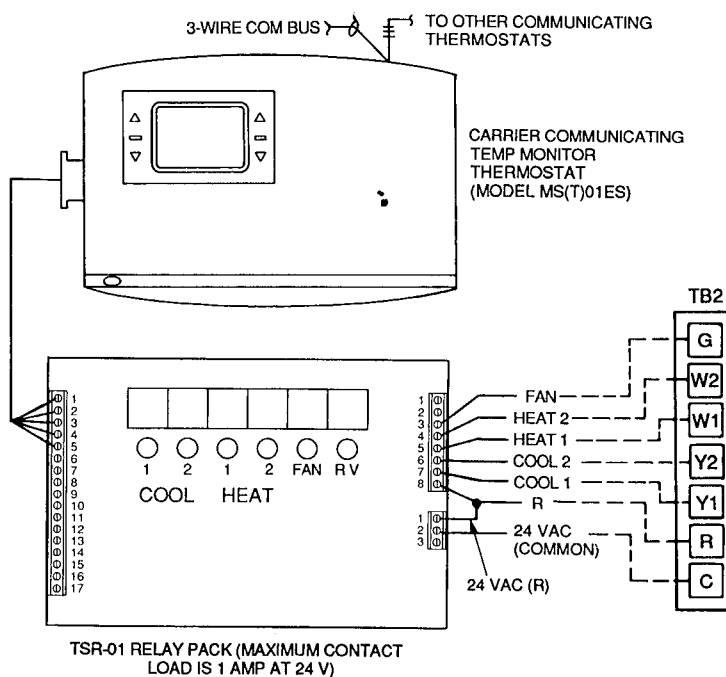
CONCENTRIC DUCT DETAILS (50TJ016-028 ONLY)



Shaded area indicates block-off panels

NOTE: Dimensions A, A' and B, B' are obtained from field-supplied ceiling diffuser

FIELD THERMOSTAT WIRING



LEGEND
COMM — Communications
TB — Terminal Block

Packaged Rooftop Cooling Unit with Electric Heat Option — Constant Volume Application

HVAC Guide Specifications

Size Range: **3 to 12½ Tons, Nominal Cooling**

Carrier Model Number: **50TJ**

Part 1 — General

1.01 SYSTEM DESCRIPTION

- A. Outdoor rooftop- or slab-mounted, electrically controlled cooling unit with optional heat utilizing a hermetic compressor for cooling duty and electric resistance coils for heating duty. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.

1.02 QUALITY ASSURANCE

- A. Unit shall be rated in accordance with ARI Standards 210/240 or 360 and 270.
- B. Unit shall be designed to conform to ASHRAE 15, latest revision, and in accordance with UL 1995.
- C. Unit shall be UL listed and CSA certified as a total package for safety requirements.
- D. Roof curb shall be designed to conform to NRCA Standards.
- E. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- F. Unit casing shall be capable of withstanding Federal test method Standard No. 141 (Method 6061) 500-hour salt spray test.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Unit(s) shall be stored and handled per manufacturer's recommendations.

Part 2 — Products

2.01 EQUIPMENT (STANDARD)

A. General:

Factory-assembled, single-piece cooling unit with optional heat. Contained within the unit enclosure shall be all factory wiring, piping, controls, refrigerant charge (R-22), and special features required prior to field start-up.

B. Unit Cabinet:

- 1. Unit cabinet shall be constructed of galvanized steel, bonderized and coated with a baked enamel finish on all externally exposed surfaces.
- 2. Evaporator fan cabinet interior shall be insulated with a minimum ½-in. thick flexible fiberglass insulation coated on the air side. Aluminum foil-faced fiberglass insulation shall be used in the furnace compartment.
- 3. Cabinet panels shall be easily removable for servicing.
- 4. Holes shall be provided in the base rails for rigging shackles to facilitate overhead rigging, and forklift slots shall be provided to facilitate maneuvering.

- 5. Unit shall have a factory-installed, sloped condensate drain pan made of a non-corrosive material, providing a minimum ¾-in. connection.
- 6. Unit shall have a factory-installed filter access door to provide filter access with no panel or screw removal.

C. Fans:

- 1. Indoor blower (evaporator fan) shall be of the direct- or belt-driven, double inlet, forward-curved centrifugal type. Belt drive shall include an adjustable-pitch motor pulley.
- 2. Indoor blower (evaporator-fan) shall be made from steel with a corrosion-resistant finish and shall be dynamically balanced.
- 3. Bearings shall be of the sealed, permanently lubricated, ball-bearing type for longer life and lower maintenance.
- 4. Condenser fan shall be of the direct-driven propeller type and shall discharge air vertically.
- 5. Condenser fan shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.

D. Compressor(s):

- 1. Fully hermetic type, internally protected.
- 2. Factory rubber shock mounted and internally spring mounted for vibration isolation.
- 3. On independent circuits (008-014).

E. Coils:

- 1. Condenser coils shall have aluminum plate fins mechanically bonded to enhanced copper tubes with all joints brazed.
- 2. Tube sheet openings shall be belled to prevent tube wear.
- 3. Evaporator coil shall be of the full face active design.

F. Refrigerant Components:

Refrigerant circuit components shall include:

- 1. Acutrol™ feed system.
- 2. Refrigerant strainer.
- 3. Service gage connections on suction, discharge, and liquid line.

G. Filter Section:

- 1. Standard filter section shall consist of factory-installed low-velocity, throwaway 2-in. thick fiberglass filters of commercially available sizes.
- 2. Filter face velocity shall not exceed 320 fpm at nominal airflows.

H. Controls and Safeties.

1. Unit Controls:

Unit shall be complete with self-contained low-voltage control circuit.

2. Standard Safeties:

- a. Unit shall incorporate compressor overtemperature and overcurrent safety devices to shut off compressor.
- b. Heating section shall be provided with the following minimum protections:
 - 1) High-temperature limit switches.
 - 2) Overcurrent protection.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 115 F ambient outdoor temperature, meeting maximum load criteria of ARI Standard 210/240 or 360 at $\pm 10\%$ voltage.
2. Compressor with standard controls shall be capable of operation down to 25 F ambient outdoor temperature.

J. Electrical Requirements:

All unit power wiring shall enter unit cabinet at a single factory-predrilled location.

K. Motors:

1. Compressor motors shall be cooled by refrigerant passing through motor windings and shall have line break thermal and current overload protection.
2. Indoor blower (evaporator-fan) motor shall have permanently lubricated bearings and inherent automatic-reset thermal overload protection.
3. Totally-enclosed condenser-fan motor shall have permanently lubricated bearings, and inherent automatic-reset thermal overload protection.

L. Special Features:

Certain features are not applicable when the features designated by * are specified. For assistance in amending the specifications, your local Carrier Sales Office should be contacted.

1. Roof Curb:

- a. Formed galvanized steel with wood nailer strip and capable of supporting entire unit weight.
- b. Allows for installing and securing ductwork to curb prior to mounting unit on the curb.

* 2. Integrated Economizer:

- a. Integrated incremental-modulating type capable of simultaneous economizer and compressor operation.
- b. Includes all hardware and controls to provide cooling with outdoor air.
- c. Equipped with low-leakage dampers not to exceed 3% leakage, at 1 in. wg pressure differential.
- d. Capable of introducing up to 100% outdoor air.
- e. Equipped with a gravity relief sliding plate damper. Damper shall close upon unit shutoff.

* 3. Manual Outdoor-Air Damper:

Manual damper package shall consist of damper, birdscreen, and rainhood which can be preset to admit up to 25% outdoor air for year-round ventilation

* 4. Two-Position Outdoor-Air Damper:

- a. Two-position damper package shall include single blade damper. Admits up to 25% outdoor air.
- b. Damper shall close upon unit shutoff.

* 5. Solid-State Enthalpy Control:

- a. For use with economizer package only.
- b. Capable of sensing outdoor-air enthalpy content (temperature and humidity) and controlling economizer cut-in point to have minimum heat content air passing over the evaporator coil for most efficient system operation.

* 6. Differential Enthalpy Sensor:

- a. For use with economizer only.
- b. Capable of comparing enthalpy content (temperature and humidity) of outdoor and indoor air and controlling economizer cut-in point at the most economical level.

* 7. Electric Resistance Heaters:

- a. Open wire nichrome elements with all necessary safety operating controls.
- b. UL listed and indicated on basic unit informative plate.
- c. Available in multiples to match heating requirements.

* 8. Head Pressure Control Package:

Consists of solid-state control and condenser-coil temperature sensor to maintain condensing temperature between 90 F and 110 F at outdoor ambient temperatures down to -20 F by either condenser-fan speed modulation (004-007) or condenser-fan cycling (004-014).

* 9. Remote Control Panel:

Panel shall be a decorative, indoor, wall-mounted panel consisting of:

- a. Two-stage heat/2-stage cool thermostat.
- b. Automatic changeover.
- c. System switch with HEAT-COOL-AUTO.-OFF settings.
- d. Fan switch with ON-AUTO. settings.
- e. Ventilation control for remote variation of the amount of outdoor-air intake.
- f. Indicator lights for HEAT-COOL-FAN operation.
- g. Three unused indicator lights for field use.

- * 10. Thermostat and Subbase:
Provides staged cooling and heating automatic (or manual) changeover, fan control, and indicator light.
- 11. Thru-the-Curb Service Connections:
Allow electrical connections to be brought to the unit through the roof curb.
- * 12. Electronic Programmable Thermostat.
Capable of using deluxe full-featured electronic thermostat.
- 13. Condenser Coil Hail Guard Assembly:
Hail guard shall protect against damage from hail and flying debris.
- 14. Controls Upgrade Kit:
Kit shall contain high-pressure, loss-of-charge/low-pressure, and freeze protection switches. It shall mount on factory-installed Schrader fittings.
- 15. Alternate Motors and Drives:
Alternate motors and drives shall be factory-installed to provide additional performance range.
- 16. External Filter Package:
 - a. For use with economizer on horizontal applications.
 - b. Package shall contain all necessary hardware and instructions to install filters outside of the unit.
- 17. Condenser Coil Grille:
The grille protects the condenser coil from damage by large objects without increasing unit clearances.
- 18. Compressor Cycle Delay:
Unit shall be prevented from restarting for a minimum of 5 min. after shutdown

Guide specifications — 50TJ016-028



Packaged Rooftop Cooling Unit with Electric Heat Option, Constant Volume Application

HVAC Guide Specifications

Size Range: **15 to 25 tons, Nominal Cooling**

Carrier Model Number. **50TJ**

Part 1 — General

1.01 SYSTEM DESCRIPTION

Unit is an outdoor, rooftop-mounted, cooling unit utilizing reciprocating, semi-hermetic (016,028) or hermetic (020,024) compressor(s) for cooling duty. Supply air is discharged vertically or horizontally (with horizontal supply/return adapter curb assembly) as shown on contract drawings.

1.02 QUALITY ASSURANCE

- A. Unit (016-024) shall be rated in accordance with ARI Standard 360 and designed in accordance with UL Standard 1995.

NOTE. The 50TJ028 is beyond the scope of the ARI certification program.

- B. Unit shall be ETL and Warnock Hersey listed.
- C. Roof curb shall be designed to conform to NRCA Standards.
- D. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- E. Unit casing shall be capable of withstanding Federal test method Standard No. 141 (Method 6061) 500-hour salt spray test.

1.03 DELIVERY, STORAGE, AND HANDLING

Unit shall be stored and handled per manufacturer's recommendations.

Part 2 — Products

2.01 EQUIPMENT (STANDARD)

A. General:

The 50TJ unit shall be a factory-assembled, single piece cooling unit. Contained within the unit enclosure shall be all factory-installed wiring, piping, controls, refrigerant charge (R-22), and special features required prior to field start-up.

B. Unit Cabinet:

- Unit cabinet shall be constructed of galvanized steel, precoated with a baked enamel finish.
- Indoor blower compartment interior surfaces shall be insulated with a minimum 1/2-in. thick, flexible fiberglass insulation coated on the air side.
- Cabinet panels shall be easily removable for servicing.
- Filters shall be accessible through an access panel.
- The manual damper shall permit up to 25% outdoor air for year-round ventilation.

- Holes shall be provided in the base rails for rigging shackles to facilitate overhead rigging.
- Unit shall have a factory-installed internal condensate drain connection and a sloped condensate pan.

C. Fans:

- Indoor Blower (Evaporator Fan):
 - The fan shall be belt driven with adjustable motor pulleys.
 - The fan wheel shall be made from steel, be of the double inlet type with forward-curved blades, and have a corrosion-resistant finish. It shall also be dynamically balanced.
 - Fan bearings shall be of the pillow block (020-028), ball-bearing type.
- The condenser fan shall be of the direct driven, propeller type, with corrosion-resistant blades riveted to corrosion-resistant steel spiders. It shall be dynamically balanced and discharge air vertically.

D. Compressor(s):

- The reciprocating semi-hermetic or hermetic compressor(s) shall have factory-installed external spring vibration isolation (016,028) or shall be factory rubber shock mounted and internally spring mounted (020,024) for vibration isolation.
- The factory-installed crankcase heater shall prevent refrigerant dilution of oil (016,028).
- The semi-hermetic compressor shall have unloading capability (016 only).
- On independent circuits (020-028).

E. Coils:

Evaporator and condenser coils shall have aluminum or copper plate fins mechanically bonded to seamless copper tubes with all joints brazed.

F. Refrigerant Components:

Refrigerant circuit components shall include.

- Filter driers and fixed expansion devices.
- Service gage connection on suction, discharge, and liquid lines.
- Acutrol™ feed system.

G. Filter Section.

Standard filter section shall consist of 2 sizes of factory-installed, 2-in. thick throwaway fiberglass filters of commercially available sizes.

H. Controls and Safeties:

1. Unit Controls.

Controls shall perform the following functions:

- Capacity control (2-step).
- Economizer operation (optional).
- Self-contained low-voltage control circuit

2. Safeties:

- a. Should any of the following safety devices trip and shut off the compressor, the unit shall incorporate a solid-state compressor lockout which will provide reset capability at the space thermostat:
 - 1) Compressor overtemperature, overcurrent.
 - 2) Low-pressure switch.
 - 3) High-pressure switch.
 - 4) Freeze protection thermostat.
- b. Heating section shall be provided with the following minimum protections:
 - 1) High-temperature limit switches.
 - 2) Overcurrent protection.

I. Operating Characteristics:

1. Unit shall be capable of starting and running at 115 F ambient outdoor temperature per maximum load criteria of ARI Standard 360.
2. Unit shall have standard controls and will operate in cooling to 40 F on 50TJ016 units, to 25 F ambient on 50TJ020 and 024 units, and to 48 F ambient on 50TJ028 units.

J. Electrical Requirements:

All unit power wiring shall enter unit cabinet at a single location.

K. Motors:

1. The 50TJ016 and 028 compressor motors shall be of the refrigerant cooled type with internal thermal overload protection and shall use a calibrated circuit breaker for electrical protection. The 50TJ020 and 024 compressor motors shall be cooled by refrigerant passing through motor windings and shall have line break thermal and current overload protection.
2. All fan motors shall have permanently lubricated, sealed bearings and inherent automatic reset thermal overload protection or manual reset calibrated circuit breakers.

L. Special Features:

Certain standard features are not applicable when the features designated * are specified. For assistance in amending the specifications, your local Carrier Sales office should be contacted.

1. Roof Curb:

The roof curb shall be formed of 18-gage steel with wood nailer strip and shall be capable of supporting unit's entire weight.

* 2. Integrated Economizer:

- a. Integrated type capable of simultaneous economizer and compressor operation to provide cooling with outdoor air.
- b. Equipped with low-leakage dampers not to exceed 3% leakage at 1.0 in. wg pressure differential.
- c. Capable of introducing up to 100% outdoor air.
- d. Equipped with dry-bulb temperature control to govern economizer changeover.

* 3. Head Pressure Control Package:

Package shall consist of an accessory outdoor-air package and a solid-state control with condenser coil temperature sensor for controlling condenser fan motor speed to maintain condensing temperature between 90 F and 100 F at outdoor ambient temperatures down to -20 F.

* 4. Power Exhaust Package:

Package shall include an exhaust fan, motor, and damper for vertical flow units with economizer to assure proper building pressurization.

* 5. Barometric Relief Damper Package:

- a. Package shall include damper, seals, hardware, and hoods to relieve excess internal pressure.
- b. Damper shall close due to gravity upon unit shutdown.

* 6. Thermostat and Subbase Assembly:

To provide staged heating and cooling in addition to automatic (or manual) changeover and fan control.

7. Two-Position Damper:

The two-position damper package shall include a single-blade damper and motor. It admits up to 25% outdoor air, and shall close upon unit shutoff.

8. Accessory Compressor Cycle Delay:

The compressor cycle delay prevents rapid cycling of the compressor by preventing it from restarting for a minimum of 5 minutes after shutdown.

9. Electric Heater Package:

Fully assembled for installation. The 208/230-v and 460-v units are designed in accordance with UL standards and all units feature a single point connection.

Guide specifications — 50TJ016-028 (cont)



- 10. 25 F Low Ambient Kit:
When used, allows 016 and 028 units to operate at lower outdoor ambient temperatures
- * 11. Differential Enthalpy Sensor:
 - a. For use with economizer only
 - b. Capable of comparing enthalpy content (temperature and humidity) of outdoor and indoor air and controlling economizer cut-in point at the most economical level
- * 12. Remote Control Panel:
Panel shall be a decorative, indoor, wall-mounted panel consisting of:
 - a. Two-stage heat/2-stage cool thermostat.
 - b. Automatic changeover.
 - c. System switch with HEAT-COOL-AUTO.-OFF settings.
- d. Fan switch with ON-AUTO. settings.
- e. Ventilation control for remote variation of the amount of outdoor-air intake.
- f. Indicator lights for HEAT-COOL-FAN operation.
- g. Three unused indicator lights for field use.
- * 13. Electronic Programmable Thermostat:
Capable of using deluxe full-featured electronic thermostat.
- 14. Winter Start Time-Delay Relay:
Used in conjunction with the accessory 25 F low-ambient kit (028) or head pressure control device (020-028), permits operation in cooling at lower outdoor ambient temperatures.

